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Oceans and the law of the sea

Regular process for global reporting and assessment of the state of the marine environment, including socio-economic aspects: the "assessment of assessments"

Letters dated 11 May 2009 from the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization and the United Nations Environment Programme addressed to the Secretary-General

Letter dated 11 May 2009 from the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization addressed to the Secretary-General

We want to call your attention to what we feel could be considered one of the most comprehensive initiatives that the United Nations system is involved in to improve ocean governance in the coming years. The oceans are the ultimate global commons, providing essential ecological services that make life possible on our planet. The current piracy crisis has highlighted an important gap in ocean governance, despite the pioneering and successful efforts of the United Nations to promote a law-based regime for the use of the oceans and its resources, as crystallized in the United Nations Convention on the Law of the Sea of 1982.

While the United Nations Convention on the Law of the Sea provides an integrated legal framework on which to build sound and effective regulations regarding the different uses of the ocean, other United Nations specialized agencies and programmes also play roles in various marine-related ocean issues. Nevertheless, severe limitations do exist, especially in the monitoring and enforcement of regulations and in the context of a fundamental weakness of national and international institutions still being too compartmentalized on a sector-by-sector division of duties and responsibilities, thus leaving little room for integrated policymaking which addresses cross-cutting issues.

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Despite progress achieved, regulation of the high seas or trans-zonal fisheries remains a major challenge. There is an increasing concern that many fisheries practices are unsustainable and that global fisheries face a major crisis. Many special habitats are threatened by unsustainable uses, especially in the coastal environment. Mangroves, estuaries, coral reefs and seamounts harbouring hot spots of marine biodiversity are under threat. The illegal traffic of people, arms and drugs is increasing.

These alarming trends led the World Summit on Sustainable Development in 2002 to agree to maintain the oceans under permanent review by establishing a regular process to conduct global and integrated assessments of the state of the ocean. The report we are submitting to you through the present letter (see annex) responds to this mandate and to United Nations General Assembly resolution 60/30, in which the Assembly invited our two organizations to lead in the start-up phase of this process. Later this year, an Ad Hoc Working Group of the Whole will consider this report and propose recommendations on a course of action to the Assembly at its sixty-fourth session. We hope that a positive endorsement will pave the way for the first global, fully integrated assessment of the world's oceans and seas, to be conducted under the United Nations system by 2013-2014, which coincides with the planned date for the next consideration of the world's oceans and seas by the Commission on Sustainable Development and the twentieth anniversary of the entry into force of the United Nations Convention on the Law of the Sea.

(*Signed*) Achim **Steiner**
United Nations Under-Secretary-General
Executive Director, United Nations Environment Programme

(*Signed*) Patricio **Bernal**
Executive Secretary, Intergovernmental Oceanographic Commission
Assistant Director-General of the
United Nations Educational, Scientific and Cultural Organization

Letter dated 11 May 2009 from the United Nations Environment Programme addressed to the Secretary-General

Following the mandate contained in section XI of United Nations General Assembly resolution 60/30 that launched the start-up phase for a regular process for global reporting and assessment of the state of the marine environment, including socio-economic aspects, referred to as the "assessment of assessments", the United Nations Environment Programme (UNEP) and the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (UNESCO), as the invited lead agencies, are pleased to transmit to you the report on the assessment of assessments, to be submitted to the General Assembly at its sixty-fourth session for its consideration under the agenda item "Oceans and the law of the sea" (see annex). The report will also serve as a basis for discussions by the Ad Hoc Working Group of the Whole, convened by the Assembly in paragraph 157 of its resolution 63/111 and to be held in New York from 31 August to 4 September 2009, to recommend to the Assembly at its sixty-fourth session a course of action regarding a regular process.

The report, in United Nations General Assembly format, contains a report on the outcomes of the fourth meeting of the assessment of assessments Ad Hoc Steering Group and the findings of the assessment of assessments, including options and a framework for a regular process. The information is derived from the full assessment of assessments report, which includes the annexes containing the regional and supra-regional summaries as well as the summary for decision makers report. These reports are available as final pre-release versions (currently undergoing copy-editing) on the assessment of assessments website (www.unga-regular-process.org) under the "assessment of assessments report" section. The published designed versions (in electronic and print format) will be available by mid-August 2009.

Background

In 2002, the World Summit on Sustainable Development, held in Johannesburg, South Africa, recommended action to establish a regular process under the United Nations for global reporting and assessment of the state of the marine environment, including socio-economic aspects (the "regular process"). After endorsement by the United Nations General Assembly and examination of the idea by two international workshops, the Assembly, in its resolution 60/30, put in place arrangements for a start-up phase of the regular process, referred to as the "assessment of assessments". More information can be found on the assessment of assessments website.

The mandate for the assessment of assessments is that it should:

(a) Assemble information on marine assessments relevant to a global regular process, such as those carried out under the purview of United Nations agencies, global treaty organizations, regional organizations, national Governments and other relevant organizations, where appropriate;

(b) Undertake a critical appraisal of the assessments in order to evaluate their scientific credibility, policy relevance, legitimacy and usefulness. The appraisal should, in particular, identify:

(i) Best practices and approaches (including assessment methodologies);

(ii) Thematic and geographic assessment gaps and needs;

(iii) Uncertainties in scientific knowledge, data gaps and research needs;

(iv) Networking and capacity-building needs in developing countries and countries with economies in transition;

(v) A framework and options to build the regular process, including potential costs, based upon current relevant assessment processes and practices.

The arrangements under the assessment of assessments process provided for an Ad Hoc Steering Group, consisting of representatives of States Members of the United Nations (selected on a balanced regional basis) to oversee the process, a group of regionally represented experts to conduct the assessment and two United Nations specialized bodies (UNEP and the Intergovernmental Oceanographic Commission of UNESCO) to provide secretariat support.

The Group of Experts has been working since March 2007 on the assessment of assessments report. It has now completed the report, which followed a peer review process in accordance with what the Group considers to be best practice. The report has been reviewed by 34 recognized experts in relevant fields, 15 international institutions and 29 Governments. More than 1,200 comments were received, which were all considered and addressed by the authors.

The assessment of assessments report was finalized and signed at the fifth meeting of the Group of Experts, held in Geneva from 19 to 21 March 2009. At the fourth and last meeting of the Ad Hoc Steering Group, held in Paris from 15 to 17 April 2009, it was decided that the attached report (see annex) would be transmitted to the Secretary-General of the United Nations, through the United Nations/Office of Legal Affairs/Division for Ocean Affairs and the Law of the Sea, to serve as a basis for discussions by the United Nations General Assembly Ad Hoc Working Group of the Whole, to be convened in New York from 31 August to 4 September 2009.

(*Signed*) Patricio **Bernal**
Executive Secretary, Intergovernmental Oceanographic Commission
Assistant Director-General of the
United Nations Educational, Scientific and Cultural Organization

(*Signed*) Achim **Steiner**
United Nations Under-Secretary-General
Executive Director, United Nations Environment Programme

Annex to the letter dated 11 May 2009 from the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization and the United Nations Environment Programme addressed to the Secretary-General

Report on the results of the assessment of assessments

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Part one: report of the fourth meeting of the Ad Hoc Steering Group of the assessment of assessments

Report of the secretariat

Summary

The present report provides an account of the fourth meeting of the Ad Hoc Steering Group for the assessment of assessments of the regular process for global reporting and assessment of the state of the marine environment, including socio-economic aspects, held at the headquarters of the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (UNESCO) in Paris from 15 to 17 April 2009. The meeting was convened pursuant to United Nations General Assembly resolution 60/30, section XI, by which the Assembly established the Ad Hoc Steering Group to oversee the assessment of assessments process and invited the United Nations Environment Programme (UNEP) and the Intergovernmental Oceanographic Commission of UNESCO to jointly lead the process and, inter alia, to prepare a report on the results of the assessment of assessments for the Assembly.

The meeting was attended by members of the Ad Hoc Steering Group and representatives of the Group of Experts, including the Co-Chairmen of both groups. The meeting discussed the reports presented by the lead agencies on the fourth and fifth meetings of the Group of Experts held in London and Geneva, respectively, from 8 to 10 November 2008 and 19 to 21 March 2009. The secretariat reported on the peer review process, the editorial process for the assessment of assessments report and on the financial resources mobilized for the execution of the start-up phase of the regular process. Presentations on the assessment of assessments report were made by some members of the Group of Experts, led by their Co-Chairmen.

It was agreed that a final pre-release version of the assessment of assessments report, as prepared by the Group of Experts (English only), would be made available on the assessment of assessments website (www.unga-regular-process.org) and that the co-lead agencies would transmit to the Secretary-General of the United Nations, through the United Nations/Division for Ocean Affairs and the Law of the Sea, a report on the results of the assessment, including the report of the fourth meeting of the Ad Hoc Steering Group, to serve as a basis for discussions by the United Nations General Assembly Ad Hoc Working Group of the Whole, which will be convened in New York from 31 August to 4 September 2009. The Working Group was established to recommend a course of action to the Assembly at its sixty-fourth session, based on the outcomes of the fourth meeting of the Steering Group.

I. Welcome and opening

Item 1: Opening and organization of the meeting

1. The fourth meeting of the Ad Hoc Steering Group of the assessment of assessments of the regular process for global reporting and assessment of the state of the marine environment, including socio-economic aspects, was opened by Patricio Bernal, Executive Secretary of the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (UNESCO) at 3 p.m. on Wednesday, 15 April 2009. Mr. Bernal welcomed members of the Steering Group and thanked them for their dedication and valuable contribution towards the process. Salif Diop, on behalf of the United Nations Environment Programme (UNEP), also made some remarks regarding the final stage of the assessment of assessments process. He emphasized the importance of the process, while highlighting the tight production schedule under which the secretariat would have to work. He thanked all members of the Group of Experts and members of the Steering Group for their dedication and hard work throughout the start-up phase of the regular process.

II. Adoption of agenda (item 2)

2. The draft agenda was adopted.

III. Attendance

3. The meeting was attended by nine members of the Ad Hoc Steering Group from Australia, Iceland, the Islamic Republic of Iran, Japan, Mexico, Peru, the Russian Federation, Spain and Uganda, and five members of the Steering Group from United Nations bodies and related international organizations: the Food and Agriculture Organization of the United Nations (FAO), the World Meteorological Organization (WMO), the International Maritime Organization (IMO), the Intergovernmental Oceanographic Commission (IOC) of UNESCO, and UNEP. Apologies were received from the following States and international organizations members of the Steering Group: the Philippines, Trinidad and Tobago, and the International Seabed Authority. Observers at the meeting included United Nations/Office of Legal Affairs/Division for Ocean Affairs and the Law of the Sea, the United Nations/Department of Economic and Social Affairs and members of the assessment of assessments Group of Experts. The overall list of participants, including the members of the secretariat and observers present, is contained in appendix II to the present report.

IV. Substantive matters

Item 3: Considerations of the substantive items of the agenda

4. The Co-Chairmen of the fourth meeting of the Ad Hoc Steering Group, Dr. Peter Harris of Australia, and Dr. Elva Escobar-Briones of Mexico, introduced the objectives of the meeting, reminded the group of the terms of reference of the Steering Group and described the process for submitting the assessment of

assessments report to the United Nations General Assembly, with reference to General Assembly resolution 63/111. Dr. Escobar-Briones invited the secretariat to present the reports of the fourth and fifth meetings of the Group of Experts of the assessment of assessments, including the process of the peer review, financial reporting on the execution of the assessment as well as the communications and outreach components of the assessment.

Item 4: Report from the lead agencies on the implementation of the assessment of assessments

5. The members of the Ad Hoc Steering Group considered the substantive items on the agenda on the basis, inter alia, of their introduction by the secretariat. The Steering Group also set aside time for presentations made by the Group of Experts on the assessment of assessments report. The overall outcomes of the deliberations of the Steering Group are reflected in the decisions reached by consensus, as presented in appendix I to the present report.

Item 5: Presentation of the assessment of assessments report and discussion

6. Representatives of the Group of Experts, led by their Co-Chairmen, presented the assessment of assessments report. The presentations, listed below, were followed by discussions with the Ad Hoc Steering Group, which were moderated by Professor Jacqueline McGlade, Co-Chairman of the Group of Experts:

(a) Presentation 1: Overall report structure, rationale and format, presented by Group of Experts Co-Chairman J. McGlade;

(b) Presentation 2: Background/introduction to the assessment of assessments report (chapter 1), Definitions and analytical framework, including a map of assessment of assessments regions (chapter 2), presented by Group of Experts member J. Rice;

(c) Presentation 3: Findings of the assessment of assessments (chapter 3), presented by Group of Experts member A. Rosenberg;

(d) Presentation 4: Best practices (chapter 4), presented by Group of Experts member J. Jaeger;

(e) Presentation 5: Framework and options (chapter 5), presented by Group of Experts members L. Kimball and A. Simcock.

There was unanimous recognition by the members of the Ad Hoc Steering Group of the quality of the presentations and, in particular, of the assessment of assessments report itself. The Steering Group engaged in a direct and open exchange of views with the representatives of the Group of Experts. The conclusions of the session are reflected under item 6 below.

Item 6: Formulation of conclusions and preparation of the Ad Hoc Steering Group report

7. In light of the dialogue between the members of the assessment of assessments Ad Hoc Steering Group and the members of the assessment of assessments Group of Experts, the Steering Group formulated the following conclusions to be included in the present report. It also formulated a set of decisions which are contained in appendix I to the present report.

Conclusions of the discussions on the assessment of assessments report

8. The Ad Hoc Steering Group notes with appreciation that:

(a) The regions defined in annex I to the assessment of assessments report and shown in the map in chapter 2 of that report were used solely for the purpose of organizing the review of existing assessments. The regions are not intended to be prescriptive with regard to regional analyses for future work of the regular process. The conclusions of the Group of Experts are to be based upon the creation of appropriate mechanisms which involve existing regional organizations and bodies in the work of the regular process, without necessarily defining any specific regions, since the emphasis must be upon bringing together information transcending the many existing defined regions;

(b) There are major variations in the information available about the oceans in different parts of the world as well as regional variations in the capacity to collect, analyse and interpret information. The proposed development, in the first cycle of the regular process, of an integrated assessment of the world's oceans and seas will inevitably reflect the limitations imposed by these variations. The proposals developed in the report of the Group of Experts do not explicitly include immediate action to collect new information to remedy those limitations, since an assessment is aimed at presenting the available information in a form which is useful to decision makers;

(c) Integrated assessments are likely to motivate substantial data collection efforts by Governments, intergovernmental and non-governmental organizations and industry to improve the data basis of future assessments. However, it is recognized that in some ocean regions the conduct of assessments is limited by the lack of capacity in some nations to collect, analyse and interpret scientific, social and economic information. Therefore, in order for a fully integrated global assessment to be possible, the creation and/or enhancement of capacity to conduct assessments in some regions of the oceans will be an essential prerequisite to the full realization of the regular process;

(d) The proposals of the Group of Experts concern the management of the scientific assessment process and are not proposals on policymaking for ocean governance. The aim of the regular process is to support existing governance mechanisms by providing information which is relevant to policymaking, not prescriptive of what policies should be adopted. The proposals for the organization and work of the regular process emphasize the role of the management and review body (which should constitute a substantial majority of representatives from Member States) to guide and oversee the individual assessments under the process. The management and review body would also comment upon the final products and draw to the attention of all States Members of the United Nations (and through the United Nations, to the appropriate governance bodies), their findings;

(e) The scale of the regular process is intended to be at the global level, covering issues relevant to all, or large parts, of the world's oceans and seas. It is intended to build upon existing and future work at the regional level, not to supplant or replace such work. Since the General Assembly has endorsed a global marine assessment process, the resources needed are substantial and will require a major commitment from States and intergovernmental organizations. Given the importance of ocean ecosystems and resources to all aspects of sustainability, such a

commitment is not only appropriate but also urgently needed to integrate and build on the existing work at the national and regional levels;

(f) The proposals for institutional arrangements of the regular process, as contained in the assessment of assessments report, relate to (i) the relationship of the process to the United Nations, (ii) the establishment of a management and review body for the process, (iii) a panel of experts and an additional pool of experts for the process, (iv) a secretariat for the process, and (v) focal points within Governments, international organizations, the private sector and civil society organizations to facilitate interaction and collaboration with the process. These arrangements attempt to reflect all aspects of the balance of interests in the world's oceans and seas while maintaining the principle that the main focus of the work must be a scientific assessment of the available information;

(g) The synthesis of knowledge for marine assessments will require the development of some new methodologies, but these will draw on models and tools in other disciplines, both in the marine area and, for example, in the climate change area. In the future, in order to integrate assessments that occur at different spatial scales (from national to regional to supra-regional/global, or vice-versa) or different temporal scales, existing methods will have to be adapted;

(h) A production schedule to release the edited, electronic and printed versions of the full report has been developed by the secretariat. The published report will be available in August 2009. Meanwhile, the Ad Hoc Steering Group agreed by consensus on a procedure for the secretariat to make available to Governments a pre-release electronic version of the assessment of assessments report, as soon as possible, for the purpose of facilitating early discussions within and among Members States (available at www.unga-regular-process.org);

(i) Outreach activities will be facilitated by the international agencies that will play a major role in the dissemination of the report through their website, press releases and links to the report and related activities;

(j) The peer review process was well documented. Numerous comments were received, which were all reviewed and addressed by the members of the Group of Experts. The vast majority of comments recognized the quality and completeness of the report, while providing valuable additional details and modifications.

Item 7: Discussions on outreach products (including publication)

9. The secretariat presented a plan for widely disseminating the results of the assessment of assessments, including the organization of side events/presentations at targeted international forums. The members of the Ad Hoc Steering Group were informed about the ongoing publication process of the assessment of assessments report. Other products aimed at publicizing the report were also discussed, including a brochure on the conclusions of the report.

Item 8: Adoption of the Ad Hoc Steering Group meeting report

10. The Ad Hoc Steering Group considered and adopted its final report containing the conclusions mentioned in the section above under item 6 as well as the decisions contained in appendix I below.

V. Closure of meeting (item 9)

11. The meeting was closed at 1.30 p.m. on 17 April 2009, by the Co-Chairmen of the Ad Hoc Steering Group. They thanked all the members of the Ad Hoc Steering Group, the Group of Experts and the secretariat for their exceptional cooperation and contributions, which has resulted in the successful outcome of not only the fourth meeting of the Steering Group, but also of the start-up phase (the "assessment of assessments") towards a regular process for global reporting and assessment of the state of the marine environment, including socio-economic aspects.

Appendix I

Decisions of the assessment of assessments Ad Hoc Steering Group

The Ad Hoc Steering Group of the assessment of assessments,

1. *Recognizing* United Nations General Assembly resolution 60/30, which established the institutional framework for the assessment of assessments, and its paragraphs 93 and 94, pertaining to the functions of the Ad Hoc Steering Group and the activities to be carried out by the lead agencies;

2. *Reiterating* the importance of establishing the regular process for global reporting and assessment of the state of the marine environment, including socio-economic aspects ("the regular process");

3. *Recognizing* United Nations General Assembly resolution 61/222, paragraph 115, urging the Ad Hoc Steering Group to complete the assessment of assessments within two years, as provided for in resolution 60/30;

4. *Also recognizing* United Nations General Assembly resolution 62/215, paragraph 128, on the overall working approach, the outline for the assessment of assessments report and the timeline and workplan for the assessment of assessments, proposed by the Group of Experts established pursuant to resolution 60/30, at the first meeting, held in Paris from 28 to 30 March 2007, and endorsed by the Ad Hoc Steering Group at its second meeting, held in New York in June 2007;

5. *Further recognizing* resolution 62/215, paragraph 129, and welcoming with appreciation the support of the United Nations Environment Programme and the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization for providing secretariat services to the Ad Hoc Steering Group and establishing the Group of Experts, as approved by the Ad Hoc Steering Group at its second meeting;

6. *Taking note* of United Nations General Assembly resolution 63/111, paragraph 157, deciding to establish an Ad Hoc Working Group of the Whole to recommend a course of action to the General Assembly at its sixty-fourth session based on the outcomes of the fourth meeting of the Ad Hoc Steering Group, held in Paris in April 2009;

7. *Welcomes* the report of the fourth and fifth meetings of the Group of Experts, held, respectively, at the International Maritime Organization in London from 4 to 6 November 2008, and the World Meteorological Organization in Geneva from 19 to 21 March 2009, and notes with appreciation the work carried out by the Group of Experts in producing the final assessment of assessments report and the summary for decision makers report in accordance with paragraph 6 of the decisions adopted by the Ad Hoc Steering Group at its first meeting, held in New York in June 2006;

8. *Notes with satisfaction* that an open-ended midterm review of the work and progress of the assessment of assessments start-up phase was conducted in June 2008 and provided all States Members of the United Nations, with an opportunity to comment on and contribute to the development of the ongoing work carried out in accordance with resolution 60/30;

9. *Recognizes* that an open, transparent and fully comprehensive peer-review of the assessment of assessments report has been undertaken based on the guidance provided by the Ad Hoc Steering Group at its first meeting, and expresses appreciation that the process has been fully documented;

10. *Welcomes* the report on the assessment of assessments, its annexes and the summary for decision makers, as presented by the Group of Experts and the lead agencies, and concludes that the report represents a sound basis for the Ad Hoc Working Group of the Whole to recommend a course of action to the General Assembly at its sixty-fourth session;

11. *Recognizes* that the map of regions appearing in the report was designed for the sole use of the assessment of assessments report;

12. *Notes with appreciation* the view of the Group of Experts that existing national, regional and global assessments provide an important basis for the regular process and make it feasible, despite gaps and regional variability, to produce more integrated assessments of the global marine environment, and stresses the need for greater integration of assessment efforts to address information gaps and for enhanced capacity-building to accompany the regular process;

13. *Expresses its full appreciation* to all the members of the assessment of assessments Group of Experts, including contributing authors and experts, and commends them on the quality of their work;

14. *Requests* the lead agencies to submit a report on the results of the assessment of assessments to the Secretary-General of the United Nations for transmission to the Ad Hoc Working Group of the Whole and to the General Assembly at its sixty-fourth session, as appropriate, and in accordance with resolutions 60/30 and 63/111;

15. *Also requests* the lead agencies to make the full pre-release version of the assessment of assessments report (including annexes, regional and supra-regional summaries and the summary for decision makers report) available on the assessment of assessments website and to proceed with the publication of the report, if possible by June 2009;

16. *Expresses its appreciation* to the relevant United Nations bodies, organizations and programmes and related international organizations for their active contribution to the activities of the assessment of assessments, and invites them to contribute to the broad dissemination of the published assessment of assessments report, including its related products, to their relevant constituencies;

17. *Expresses its firm conviction* that the process leading to the completion of the assessment of assessments has been implemented in accordance with the relevant provisions of the report of the Second International Workshop on the regular process for global reporting and assessment of the state of the marine environment, including socio-economic aspects (A/60/91), resolutions 60/30, 61/222 and 63/111, as well as with the guidance provided by the Ad Hoc Steering Group;

18. *Takes note* of the financial report on the execution of the assessment of assessments, and expresses its appreciation for the financial contributions made by Australia, Belgium, Canada, Iceland, the Netherlands, Norway, the Republic of Korea, Sweden, the United Kingdom of Great Britain and Northern Ireland and the United States of America for the implementation of the assessment of assessments,

as well as national bodies that have provided expert time to the Group of Experts, and for the in kind contributions made by the lead agencies, and commends all those involved for their commitment to realize fully the mandate of the assessment of assessments despite the shortfall in resources;

19. *Encourages* Member States to fully participate in the Ad Hoc Working Group of the Whole and, whenever possible, to consider nominating delegates with expertise in marine assessments as well as decision makers that utilize marine assessment products;

20. *Requests* that lead agencies provide information on the results of the assessment of assessments to the Informal Consultative Process at its tenth session, as appropriate;

21. *Also requests* that lead agencies make themselves available to assist with the organization of the Ad Hoc Working Group of the Whole, as appropriate.

Appendix II

List of participants in the fourth meeting of the Ad Hoc Steering Group of the assessment of assessments

Members of the Ad Hoc Steering Group

Australia

Dr. Peter HARRIS
Research Group Leader
Coastal Marine Environment, Geoscience

Iceland

Mr. Jon Erlingur JONASSON
Minister Councillor
Ministry of Foreign Affairs

Islamic Republic of Iran

Dr. Seyed Mohammad NABAVI
Deputy Head of Marine Environment
Department of the Environment

Japan

Professor Hideaki NAKATA
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Mr. Yoichiro ISHIBASHI
Sub-Leader, Environmental Risk Assessment Unit

Mexico

Dr. Elva ESCOBAR-BRIONES
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Unidad Académica Sistemas Oceánicos y Costeros, Laboratorio de Biodiversidad, Microecología

Peru

Dr. Ulises MUNAYLLA
Adviser of the Steering Council Marine Research Institute

Russian Federation

Dr. Alexander KORSHENKO
Head Marine Pollution Monitoring Laboratory
State Oceanographic Institute

Spain

Mr. José FUMEGA
Senior Researcher
Spanish Oceanographic Institute, Ministry of Science and Innovation
Centro Oceanografico de Vigo

Uganda

Mr. Joshua T. TUHUMWIRE
Commissioner
Department of Geological Survey and Mines

United Nations organizations

International Maritime Organization

Mr. René COENEN
Head Office for the London Convention and Protocol

World Meteorological Organization

Mr. Edgard CABRERA
Chief, Ocean Affairs Division, Applications Programme Department

United Nations Environment Programme

Mr. Salif DIOP
Chief, Water Unit and Senior Environmental Affairs Officer
Division of Early Warning & Assessment

Food and Agriculture Organization of the United Nations

Mr. Jorge CSIRKE
Director, Fisheries and Aquaculture Management Division

Intergovernmental Oceanographic Commission/United Nations Educational, Scientific and Cultural Organization

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Assistant Director-General of the United Nations Educational, Scientific and Cultural Organization
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Law of the Sea/Ocean Affairs Officer
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Office of Legal Affairs

United Nations/Department of Economic and Social Affairs

Ms. Kathleen ABDALLA
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Division of Sustainable Development

Members of the Group of Experts

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European Environment Agency

Dr. Jill JAEGER
Sustainable Europe Research Institute

Dr. Jake RICE
Fisheries and Oceans Canada

Mr. Alan SIMCOCK
Policy Consultant

Dr. Kwame KORANTENG, Co-Chairman
Food and Agriculture Organization of the United Nations

Ms. Lee KIMBALL
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Dr. Andrew ROSENBERG
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Ms. Carmen MORALES CASELLES
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Scientific and Cultural Organization

Part two: The assessment of assessments report: findings of the Group of Experts (pursuant to United Nations General Assembly resolution 60/30)

Summary

The present report is a summary of the full assessment of assessments report. It combines the summary for decision makers and chapter 5 of that report. The pre-release version of the full assessment of assessments report, including its annexes and the summary for decision makers, is available at www.unga-regular-process.org (see assessment of assessments report section). The published version will be available in August 2009.

I. Structure of the full assessment of assessments report

Chapter 1: Introduction

1. Chapter 1 first reviews the origins and mandate of the assessment of assessments and places its work in the context of major findings about the state of the oceans, highlighting the need for urgent and coordinated responses, and briefly explaining the ocean governance system within which this process would function. It goes on to introduce how a regular process could help decision makers find sound solutions to the oceans' problems. Finally, there is an overview of the content of the report and the linkages between the different chapters.

Chapter 2: Definitions and analytical framework

2. Chapter 2 presents the framework used by the Group of Experts in its work. The first part of the chapter describes the analytical framework used in chapters 3 and 4. The framework evaluates how assessments come to be considered relevant, legitimate and credible, which are the three conditions considered necessary for an assessment to have influence. This is followed by a broad definition of assessment and a summary of the diverse types of assessments that have been examined, as categorized in the assessment of assessments report. The remaining portion of the chapter defines terms that are used in specific ways in the report. The emphasis is on providing consistent terminology for different types of assessments and consistent use of geographical terms.

Chapter 3: Review of existing assessments and findings

3. Chapter 3 provides an overview of existing marine assessments and summarizes the main findings of the Group of Experts review, in relation to both assessment product and assessment process. The assessments have been examined at three different levels: individual, regional and global, and supra-regional

assessments. Summaries of the regional and global/supra-regional assessments are found in the annexes to the full report. Information about individual assessments is included in the Global and Regional Assessments of the Marine Environment Database (GRAMED) described in box 3.1. Chapter 3 considers strengths, gaps and needs within each region and at larger scales. In particular, it aims to clarify existing capacity and technical approaches for assessments and the range of processes currently used to plan and deliver assessments. It examines the various data types and methods used in assessments and describes the most common features of existing assessment processes. A final section summarizes capabilities for assessing ecological and multisectoral interactions and broad-scale patterns within and across regions.

Chapter 4: Best practices

4. Chapter 4 presents a normative analysis of assessment best practices. It identifies three basic elements of an assessment process: principles for the establishment and operation of the process as a whole; design features for an influential assessment; and institutional arrangements for organizing an assessment. For 11 design features, it identifies best practices. For the twelfth design feature, institutional arrangements, three issues of particular significance are highlighted: the boundary between science and policy; stakeholder involvement; and linkage of existing assessment processes. (Institutional arrangements for a number of existing assessment processes are summarized in annex II to the assessment of assessments report.) The purpose of chapter 4 is to provide guidance for the establishment and operation of the regular process. The chapter builds on the analysis and findings of chapter 3 and uses the analytical framework set out in chapter 2.

Chapter 5: The way forward — framework and options for the regular process

5. Chapter 5 builds on the previous chapters to present a possible way forward for the regular process. It considers what the process can deliver and relates the content of a possible first cycle of the process to forthcoming milestones relevant for oceans policy. It sets out a framework for the process consisting of:

(a) An overall objective;

(b) A description of the overall scope within which regular process assessments will be designed;

(c) A set of principles to guide the establishment and operation of the regular process;

(d) Best practice to be followed in designing and implementing key features of the regular process and applying the principles.

6. Potential products from a first cycle are considered in relation to four fundamental building blocks: capacity-building; improving knowledge and methods of analysis; enhancing networks among existing assessment processes and international monitoring and research programmes; and creating communications tools and strategies for the products of the regular process.

7. The next section of chapter 5 considers six institutional aspects of the regular process, together with options:

(a) The relationship of the regular process to the United Nations;

(b) The establishment of a management and review body for the regular process;

(c) A panel of experts for the regular process;

(d) An additional pool of experts for the regular process to draw upon;

(e) A secretariat for the regular process;

(f) Focal points within Governments, international organizations (global and regional), the private sector and civil society organizations to facilitate interaction and collaboration with the regular process.

8. A final section addresses options for financing the regular process, followed by an appendix which further develops how to implement the first cycle and provides an overall indication of the levels of financing that might be needed.

9. The supporting annexes in the assessment of assessments report are as follows:

(a) Annex I: table of the regions used in the assessment of assessments;

(b) Annex II: institutional arrangements for selected assessment processes;

(c) Annex III: profile and criteria for the selection of experts for the assessment of assessments;

(d) Annex IV: regional summaries;

(e) Annex V: supra-regional summaries;

(f) Annex VI: template used for individual assessments;

(g) Annex VII: template used for regional summary of assessments.

II. Introduction

10. In 2002, in its Johannesburg Plan of Implementation, the World Summit on Sustainable Development supported actions at all levels to "establish by 2004 a regular process under the United Nations for global reporting and assessment of the state of the marine environment, including socio-economic aspects, both current and foreseeable, building on existing regional assessments". This was endorsed later in 2002 by the United Nations General Assembly in its resolution 57/141.

11. In 2005, the General Assembly launched the assessment of assessments as a preparatory stage towards the establishment of the regular process. In its resolution 60/30, the Assembly established an Ad Hoc Steering Group to oversee the execution of the assessment of assessments and a Group of Experts to undertake the actual work. It invited the United Nations Environment Programme (UNEP) and the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (UNESCO) to serve as lead agencies for the

assessment of assessments process[1] to provide secretariat services and coordinate the work.

12. In 2006, the General Assembly, in its resolution 61/222, in the context of ecosystem approaches to the oceans, noted that the continued environmental degradation in many parts of the world and increasing competing demands required an urgent response and the setting of priorities for management interventions aimed at conserving ecosystem integrity. It drew attention to consensus that ecosystem approaches to ocean management should be focused on managing human activities in order to maintain and, where needed, to restore ecosystem health in order to sustain goods and environmental services, provide social and economic benefits for food security, sustain livelihoods in support of international development goals and conserve marine biodiversity.

13. Opportunities to demonstrate concrete achievements through the regular process include:

(a) Year 2010, the World Summit on Sustainable Development target encouraging application of the ecosystem approach to ensure sustainable development of the oceans;

(b) Year 2012, 10 years since the World Summit on Sustainable Development recommended setting up the regular process;

(c) Year 2014, the twentieth anniversary of the entry into force of the United Nations Convention on the Law of the Sea;

(d) Year 2014, when the Commission on Sustainable Development is expected to reconsider oceans.

III. Rationale for the regular process

14. Human beings depend upon healthy oceans and well-functioning marine ecosystems for such goods as food, medicine and energy, and to protect their communities from severe storms. The oceans sustain major industries, such as fisheries, petroleum, shipping and tourism. They are vital for the Earth's life support processes — they play an essential role in global climate, the water cycle and the circulation of nutrients, and in delivering oxygen to the air and absorbing carbon dioxide, and they create the habitat needed by marine species to survive. Culturally, marine life and landscapes have great spiritual, aesthetic and recreational values.

15. As 71 per cent of the Earth's surface is covered by the oceans, they have long seemed immense, inexhaustible and impervious to human influence — an enormous reservoir to be exploited and utilized. Currently, there are many signs that marine ecosystems are experiencing unprecedented environmental change, driven by human activities. Pressures from fishing, pollution from land-based and sea-based sources, marine debris, the loss and degradation of valuable habitat and invasions by non-native species are growing worldwide. Each of these pressures may affect marine species, water quality or habitat, directly and indirectly. The cumulative and interactive effects of different natural and human-induced pressures over time can seriously disrupt whole ecosystems and the goods and services they provide.

[1] See www.unga-regular-process.org.

16. Marine monitoring and research are the basic tools for understanding what is happening in the oceans, why and the extent to which response measures have been effective. Assessment assembles this knowledge in a form useful for decision-making. It can tease out the relative significance of different ocean problems and their causes, in environmental, social and economic terms, and it can analyse response measures showing what has worked and the likely consequences of various options for future action. Regular assessment is an integral part of adaptive management that can respond to changing conditions.

17. Currently, there is no systematic effort to keep under continuing review the state of the world's oceans or the sustainability of how human beings use and manage them. Without baselines and reference points, it is impossible to place current status and recent trends into historical contexts. There is limited ability to detect or predict indirect and cumulative effects, some of which may only become apparent after long time lags. In all regions, more integrated, ecosystem-based approaches are needed in order to assess how to sustain ecosystem goods and services and their social and economic benefits and how to avoid the risks of change for human well-being.

18. It is essential to build on, guide and strengthen existing marine assessments in order to advance a more coherent global system that clarifies and recognizes linkages — within ecosystems, between regions and in relation to how land-based and riverborne inputs and climate change affect the state of the marine environment — in order to provide an overview of the state of the marine environment and its interaction with the world economy and human society. In many regions there is a need to strengthen capacity for utilizing data and information, and to expand data collection and analysis in key areas necessary for informed decision-making. Preserving and building on knowledge from one assessment to the next is vital.

19. There is no global forum to define assessment needs and consider findings regularly so that ocean pressures and linkages are tackled in an effective, integrated and timely manner, or to provide guidance on the appropriate levels and mechanisms for decision-making within the complex system of ocean governance. A regular global marine assessment process is a means of structuring existing information from different disciplines to enable new patterns and new understanding to emerge. It can stimulate further development of the information base, improve knowledge and methods of analysis, facilitate priority-setting at different levels and, by linking potential solutions to identified problems, can develop better guidance for policymakers in a variety of sectors and fields. This will better serve progress not only towards achieving the goals for sustainable ocean management set out in the Johannesburg Plan of Implementation but also towards achieving the Millennium Development Goals adopted by the United Nations General Assembly.

20. For marine assessments to have influence, the processes which produce them must be perceived as relevant, legitimate and credible (see box 2). This will require careful attention to ensure that the regular process is designed and operated in accordance with certain principles and best practice. In addition, collaboration among Governments, international institutions and other stakeholders will be essential for the establishment and operation of the regular process.

IV. Mandate of the assessment of assessments

21. The mandate given the assessment of assessments[2] was to:

(a) Assemble information about marine assessments relevant to the regular process (see chapter 3 and annexes IV and V to the assessment of assessments report);

(b) Undertake a critical appraisal of the assessments in order to evaluate their scientific credibility, policy relevance, legitimacy and usefulness. The appraisal should, in particular, identify:

(i) Best practices and approaches (including assessment methodologies);

(ii) Thematic and geographic assessment gaps and needs;

(iii) Uncertainties in scientific knowledge, data gaps and research needs;

(iv) Networking and capacity-building needs in developing countries and countries with economies in transition (see chapter 2 for the analytical framework, chapter 3 for the evaluation of gaps and needs, and chapter 4 for the best practices);

(c) Identify a framework and options to build the regular process, including potential costs, based upon current relevant assessment processes and practices (see chapter 5).

V. Findings of the assessment of assessments

A. Review of existing assessments and findings

22. Chapter 3 of the assessment of assessments report summarizes and analyses what was found in examining existing assessments in order to inventory candidate building blocks for the regular process and the gaps that need to be filled. It treats assessment products and processes separately. The relatively consistent information in the individual and regional templates, supplemented by the experts' judgement, allowed a systematic tabulation of assessment products across the assessment regions (see box 1). Tables 3.1a and 3.1b in the assessment of assessments report give an indication on the one hand of the coverage of ecosystem properties (water quality, living marine resources, habitat, lower trophic levels, protected species, social and economic conditions) and, on the other, of factors that affect the influence of the regional assessments (use of reference points and indicators, analysis of policy alternatives, degree of integration, assessment capacity). The assessments covered in the supra-regional summaries are more variable. A less systematic tabulation of some of these indicates their thematic/sectoral coverage, regularity, degree of integration, analysis of policy alternatives and coverage of social and economic conditions (see table 3.2 in the report).

23. Assessment processes vary widely among institutions and themes, both within regions and at the supra-regional level. Moreover, few were found to be documented thoroughly and the terminology used for documenting assessment practices is much

[2] More detailed information on the background and mandate of the assessment of assessments is available at www.un.org/depts/los and www.unga-regular-process.org.

less systematic than that used for documenting data and analytical methods. For a number of well-established processes, supplementary information was acquired from official websites and through members of the Group of Experts. Because it was not possible to generalize systematically, the findings about assessment processes are primarily descriptive. They are valuable in pointing towards what is needed if assessment processes are to be influential (see box 2).

Box 1
Method of the assessment of assessments

The Group of Experts established by the lead agencies and approved by the Ad Hoc Steering Group began work in 2006. It agreed on a strategy for examining existing assessments to identify coverage and gaps in data, information and assessments, both thematic and geographic, to examine the capacity to undertake marine assessments and the processes used, and to consider how existing assessments could contribute to the regular process. The Group:

(a) Identified 21 regions solely for the purposes of the report, in order to review assessments at the regional level. (A schematic map of the regions can be found at the beginning of the assessment of assessments report, while a more detailed chart of regional institutions and processes is found in annex I to the report.);

(b) Examined a range of individual assessments within each assessment of assessments region and produced an overview of assessment practices and products, together with regional summaries. (The summaries are found in annex IV to the assessment of assessments report; the individual and regional templates used for the examination are available in annexes VI and VII to the report.);

(c) Developed an additional series of "supra-regional" summaries for larger-scale assessments, focusing on a particular theme, sector or assessment process. (These summaries can be found in annex V to the assessment of assessments report.) They include, for example, open ocean pollution, fisheries, invasive alien species and marine biodiversity, as well as assessment processes, such as the large marine ecosystem assessments of the Global Environment Facility's International Waters Programme, the Global International Waters Assessment, the Millennium Ecosystem Assessment, the UNEP Global Environment Outlook and the work of the Joint Group of Experts on Scientific Aspects of Marine Environmental Protection (GESAMP).

In order to preserve the information collected and examined through the assessment of assessments process, an online database has been created by the UNEP World Conservation Monitoring Centre, known as the Global and Regional Assessments of the Marine Environment Database (GRAMED). This provides access to an extensive collection of information on assessments, scientific research studies and data holdings of relevance to the marine and coastal environment on the national, regional and supra-regional scales (http://www.unep-wcmc.org/GRAMED/).

Summary of findings on assessment products

Findings regarding assessment coverage

24. The Group of Experts found that across the globe:

(a) Assessments of living marine resources are generally the strongest, followed by extensive work in water quality assessments. All regions have at least some information on fishery status and trends, although full analytical assessments are only available in a few areas. Extensive assessments of species not exploited commercially are much less common and assessments of lower trophic levels, including primary productivity, are conducted primarily in the seas adjacent to the most developed countries. Although assessments of water quality are widespread, assessments of status and trends of physical and geochemical oceanographic conditions are uncommon except in the North Atlantic and the North Pacific;

(b) The characterization of habitat and impacts on them is less well developed and has tended to focus on specialized and high-risk environments, such as coral reefs, seagrasses, mangroves, marshes and estuaries. The methodology and framework for habitat assessments are less well developed than for living marine resources and water quality. As habitat is the property that inherently integrates many ecosystem features, strengthening these assessments is essential;

(c) Assessments of protected species (e.g., sea turtles, seabirds) are more extensive in the developed world, while limited elsewhere, and there are serious data deficiencies;

(d) Assessment of economic and social conditions is quite poor, even in those regions where extensive information is available on status and trends in the marine environment. Where data are available, they are seldom integrated in environmental assessments other than in a very general manner (population density, for example);

(e) Assessment coverage in areas beyond national jurisdiction, both thematically and sectorally, is particularly weak. Although there are several major international research programmes covering extensive open ocean and deep sea areas, data remain sparse. Consequently, models and analyses are commonly dominated by information from coastal areas or within exclusive economic zones, even when results are interpreted much more widely.

Findings regarding the integration of assessments

25. Although regional assessments often integrate results across the different sectors of human activity that cause pollution, other types of integration are rare. Assessments that integrate results across ecosystem components may exist within a given sector (e.g., ecosystem approach to fisheries), but even if there are strong fisheries assessments in some regions, they frequently have no linkage to other assessments covering habitat, water quality or other ecosystem features. As for economic and social aspects, at best institutions with regulatory authority may request assessments that combine the economic and social status of the activities they regulate and the state of the marine resources necessary for the activity (e.g., the state of the fishing industry and of the targeted stocks). Moreover, the interdisciplinary methodology for integrated assessment is not well developed.

Box 2

Analytical framework of the assessment of assessments

Chapter 2 of the assessment of assessments report sets out the analytical framework developed by the Group of Experts and used to examine existing assessments and identify best practices. It:

(a) Utilizes a broad definition of assessment ("assessments are formal efforts to assemble selected knowledge with a view to making it publicly available in a form intended to be useful for decision-making") so that a wide variety of potential building blocks for the regular process could be examined;

(b) Considers assessments as both product and process. The product includes the expert reports and the underlying data and information used in the analysis, and can have value as an authoritative presentation of expert findings. The process includes the institutional arrangements (composition, mandate, procedures) established to govern, guide and conduct assessments. It agrees on the modalities, methods and procedures that make products influential;

(c) Explains the criteria of relevance, legitimacy and credibility, as these attributes have been identified as central to an assessment's influence and used in identifying best practices. All three must be achieved to some extent, but there are trade-offs among them and balance must be achieved:

(i) Relevance of product is enhanced if the approach and findings are closely related to the needs of decision-making processes and help decision makers set priorities. The process can enhance relevance if it identifies key target audiences and ensures effective consultation and communication between them and the experts throughout the assessment process, strengthens the capacity of both experts and decision makers to interact productively and expands the informed audience(s);

(ii) Legitimacy rests on perceptions of balance and fairness in the way products reflect the contributions and concerns of all interested stakeholders, and in the way the process provides for this, including requirements for transparency and availability of data, and information and efforts to strengthen the capacity of all interested groups to contribute;

(iii) Credibility is based on the validity of information, methods and procedures. Use of high-quality data and established methods, available to the wider expert community, and treatment of all contributions without bias, enhances product credibility. The process enhances credibility through appropriate and transparent procedures for dealing with selection of experts, inclusion of the full range of expertise and interpretational perspectives, and formal procedures for quality assurance, peer review and the treatment of dissenting views and uncertainty;

(d) Summarizes how the assessment of assessments report characterizes the following diverse types of assessments: status and trends (or process), impact, response, sectoral and thematic. The term "integrated assessment" is used to mean integration across sectors, ecosystem components and/or environmental, economic and social aspects. Fully integrated assessments address all three dimensions.

26. The small number of assessments that integrate across sectors, ecosystem components and environmental, social and economic aspects is largely a function of the narrow mandates of the institutions calling for the assessments. Connections between relevant agencies are generally weak or absent, while integrating data is not normally a major objective of the agencies. Different mandates also lead to certain redundancies, for example, between institutions responsible for fisheries and those responsible for biodiversity more broadly. In regions where integrated policy frameworks are advancing (e.g., European Union Marine Strategy Framework Directive of 2008), this may lead to more integrated assessments.

Findings regarding gaps in data coverage

27. There are major gaps in global coverage of data on the marine environment and consistent time series datasets are rarely maintained. Where datasets exist for a small area, it is unclear in most cases whether they are representative of larger coastal and ocean areas. Moreover, many datasets cannot be used for integrated analyses because different sampling strategies impede the ability to relate one set to another at sufficient resolution, or database structures may not lend themselves to integration; the data therefore are not "interoperable". In some regions, database infrastructure is inadequate to maintain and fully utilize existing datasets. Too few assessments address, early on, how to manage and preserve underlying data and information for future analyses.

28. In their respective thematic and sectoral areas, several supra-regional assessments contain a large amount of information and their databases are a major resource for future integrated assessments. Three such examples include the worldwide summaries of fishery catch and effort statistics of the Food and Agriculture Organization of the United Nations (FAO), the International Oceanographic Data and Information Exchange (IODE) of the Intergovernmental Oceanographic Commission and the Ocean Biogeographic Information System (OBIS) of the Census of Marine Life (CoML). However, several issues are not well covered by regular supra-regional assessments, including social and economic changes, habitat changes and broader ecosystem changes. While some regions have important information on these topics, there are still major gaps in global coverage.

Findings regarding policy application

29. The use of indicators and reference points to compare status and trends over time to reference levels is valuable for providing advice to decision makers. There is fairly broad use in fisheries, and coherent theoretical bases exist for setting reference points across jurisdictions. There is also wide use of reference points in water quality assessments in the developed world and growing use in developing countries. In other fields, such reference points are lacking and there is not yet an

agreed framework globally for setting reference points that reflect "good" environmental or ecosystem quality.

30. In many regions there is no clear link between assessment and policy and management processes. The ability to make this connection at the regional, supra-regional and global levels is especially challenging in view of the wide range of decision-making bodies.

Findings regarding assessment capacity

31. Overall, assessment capacity (personnel and infrastructure) varies widely across regions. For some sectors, such as fisheries and water quality, technical capabilities exist in terms of skilled personnel and established methodology, but capacity may still be severely limited by lack of funding, lack of consistency in data collection and/or inadequate institutional infrastructure. For features such as habitat, both technical capabilities and infrastructure are less developed. The various Global Ocean Observing System (GOOS) monitoring initiatives are improving capability to assess oceanographic conditions, but there are major gaps in research surveys that provide data on living marine resources other than those harvested within the exclusive economic zones of the most developed countries. The capacity for integrated assessments is limited in part by methodology, in part by lack of data and infrastructure and in part by insufficient institutional mandates. Regarding the vast range of capacity-building initiatives by national, intergovernmental and non-governmental actors, the Group of Experts found that expert networks play a very constructive role through exchange of information, knowledge and expertise within, and less frequently across, different disciplines and between experts and decision makers.

Summary of findings on assessment processes

32. The most important finding of the Group of Experts is that there is limited awareness of how the design of an assessment process fundamentally affects the influence of its products, that is, their perceived relevance, legitimacy and credibility (see box 2). Findings on assessment processes are summarized in several categories which lay the groundwork for the key design features and related best practices discussed in chapter 4.

Findings regarding policy relevance

33. Many assessments do not clearly articulate the objectives and scope or the key questions to be answered by the assessment and in many regions there is no clear link between an assessment and the relevant decision-making body or bodies. A number of assessments are produced only once, or very occasionally; there is no regular cycle linking monitoring and assessment to measures previously adopted in order to evaluate progress and the need for further action. Priorities are commonly identified but this often constitutes a simple list without an objective basis for policymakers to understand the relative significance of each problem and of the various sectoral causes. Without integrated assessments, there may be no basis for setting priorities across sectors and/or ecosystem components or to evaluate trade-offs affecting environmental, economic and/or social aspects. Only some assessments analyse future policy options and, more rarely, their potential outcomes and risks in a given situation. This linkage between problem and solution is

especially informative for decision makers. Few assessments include an outlook component that develops and analyses future scenarios as an aid to decision-making.

34. However, there is growing appreciation of the need for good interaction between decision makers and experts, a direct link between the assessment process and relevant decision-making authorities and the involvement of all stakeholders in setting objectives and defining the scope of assessments. In this way, the assessment can respond to decision makers' needs, incorporate the knowledge of different stakeholders and engage their support for follow-up actions.

Findings regarding assessment legitimacy and credibility

35. It is clear that in order to enhance legitimacy and credibility, there is a need for balance among expert participants in an assessment — among disciplines and interpretational perspectives, among experts drawn from different stakeholder groups (Governments, industry, environmental organizations, academic and research institutions, holders of traditional knowledge) and on a geographic and gender basis. Similarly, in order to enhance credibility, the Group of Experts consistently found that the most reliable means of quality assurance, as a component of peer review and in other circumstances, is dialogue and debate among experts, provided that the range and balance among the experts is adequate. Peer review of assessments appeared to be standard practice but approaches vary substantially.

36. For other assessment features, such as selection of experts, means for quality assurance, availability of data and metadata, treatment of lack of consensus, communicating assessment results to the public, capacity-building and post-assessment evaluation, the Group of Experts found, on the one hand, a wide variety of practices and many useful examples and, on the other, a lack of documentation. There is a need for a more systematic approach to evaluating assessment processes and every process should provide for post-assessment evaluation.

Conclusions

37. Although assessment capacity is strong in many regions, there is a clear need for continued efforts to develop greater expertise and infrastructure around the world in the technical aspects of marine assessment. In addition, six major areas that need immediate, concerted and ongoing attention are:

(a) Ensuring that assessment processes are well designed and clearly link assessment processes and policymakers (see chapter 4), adhere to the highest standards and are fully documented by the institutions responsible for assessments;

(b) Improving data accessibility and interoperability so that assessments can be extended and scaled up or down within and across regions;

(c) Increasing the consistency of selection and use of indicators and reference points to guide the interpretation of status and trends;

(d) Developing integrated ecosystem assessments that can provide information on the state of systems rather than merely on individual sectors or ecosystem components and that include social and economic aspects;

(e) Strengthening the mandates of institutions to undertake fully integrated assessments;

(f) Strengthening capacity for response assessments that are linked directly to the findings of State, pressure and impact assessments.

B. Best practices

38. Chapter 4 of the assessment of assessments considers best practices for an assessment process and its products. It considers best practices in relation to three basic elements: the principles and design features noted below, and the institutional arrangements for organizing an assessment that are a main focus of the framework and options set out in chapter 5 of the report and reiterated below. All three elements would normally be addressed, at least in a general manner, in the decision establishing an assessment process.

Principles for the establishment and operation of an assessment process

39. Eight principles can be distilled from documents establishing assessments at the global, supra-regional, regional and national levels, and from the analysis of the Group of Experts. These principles reinforce the application of the principles adopted at the United Nations Conference on the Human Environment, held in Stockholm in 1972, and the United Nations Conference on Environment and Development, held in Rio de Janeiro, Brazil, in 1992. They express a general commitment to ensuring that the attributes of relevance, legitimacy and credibility are realized in both the assessment process and its products so that they are viewed as authoritative and influential. The principles are as follows:

(a) Viewing the oceans as part of the whole Earth system;

(b) Regular evaluation of assessment products and the process itself to support adaptive management;

(c) Use of sound science and the promotion of scientific excellence;

(d) Regular and proactive analysis to ensure that emerging issues, significant changes and gaps in knowledge are detected at an early stage;

(e) Continuous improvement in scientific and assessment capacity;

(f) Effective links with policymakers and other users;

(g) Inclusiveness with respect to communication and engagement with all stakeholders through appropriate means for their participation;

(h) Transparency and accountability for the process and its products.

Design features for an influential assessment

40. The following 12 basic considerations, or design features, are especially important for the establishment and operation of an influential assessment process. The first 11 considerations are examined in chapter 4, followed by a bulleted list of best practices for each. The final topic is considered in chapters 4 and 5.

(a) *Objectives and scope*: clear goals and definitions; progress towards integrated marine assessment and ecosystem approaches and towards regular, iterative assessment in support of adaptive management that links potential solutions to identified problems;

(b) *The science/policy relationship*: regular dialogue, policy-relevant questions, guidance for priority-setting, identified target audience(s) and the roles of Governments and other stakeholders vis-à-vis experts, including Government involvement in reviewing assessment products;

(c) *Stakeholder participation*: clear and meaningful modalities for participation by stakeholders;

(d) *Nomination and selection of experts*: transparent criteria and procedures for selecting lead authors, contributing authors, peer reviewers and other experts; provision for balance and to protect the integrity of the process from inappropriate influence and bias (e.g., from employers, funders or sponsoring bodies);

(e) *Data and information*: agreed procedures for sourcing, quality assurance and the availability and accessibility of underlying data and information, including metadata; clear standards for reporting on the extent of available data, representativeness and timeliness of available data, and the occurrence of any significant gaps; methods for scaling information up or down and for drawing inferences to reach general conclusions, including the implications for assessment findings;

(f) *Treatment of lack of consensus among experts*: clear and transparent guidelines for addressing and reporting lack of consensus;

(g) *Treatment of uncertainty*: clear and transparent guidelines for addressing and reporting uncertainty;

(h) *Peer review*: agreed, transparent criteria and procedures; use of reviewers not involved in the assessment;

(i) *Effective communication*: provision to develop a communications and outreach strategy to cover the entire period of the assessment, including appropriate products for each identified target audience;

(j) *Capacity-building and networking*: strategies for improving assessments over time through targeted efforts;

(k) *Post-assessment evaluation*: provision for post-assessment evaluation of assessment products and the assessment process itself, drawing on both insiders involved in the process and on outsiders not involved in any way;

(l) *Institutional arrangements*: clear agreement on the composition of institutional mechanisms and relationships between them; clearly articulated responsibilities for management and expert components and for the secretariat; development of a networked "system" of assessment processes.

41. It is normally better to agree on the design features in the pre-assessment stage so that the assessment itself proceeds smoothly and its objectives are achieved. Clear documentation on all these features will hasten the development of a more systematic approach to assessing and improving assessment products and processes in future.

VI. The way forward: framework and options for the regular process

A. Framework for the regular process

42. The Group of Experts recommends a framework for the regular process consisting of (a) an overall objective for the regular process, (b) a description of the scope of the regular process, (c) a set of principles to guide its establishment and operation, and (d) best practices to be followed in designing a regular process and applying the principles. These elements should be addressed in the decision establishing the process. Further details to give effect to the principles and design features would be subsequently agreed by the institutions set up to manage and implement the assessments. Plans for any particular assessment would be initiated and carried out in accordance with the agreed principles and procedures of the process and within the agreed institutional arrangements.

Overall objective of the regular process

43. A clear formulation of the overall objective of the regular process is fundamentally important. The Group of Experts suggests the following. The regular process under the United Nations for global reporting and assessment of the state of the marine environment, including social and economic aspects, will serve as the mechanism to keep the world's oceans and seas under continuing review by providing regular assessments at the global and supra-regional levels:

(a) The individual assessments under the regular process will support informed decision-making by enabling Governments and other stakeholders to draw on the best scientific information available and thus contribute to managing in a sustainable manner human activities which affect the oceans and seas;

(b) These assessments will focus on a fully integrated view of environmental, economic and social aspects. As the regular process progresses, it should encourage additional fully integrated ecosystem assessments at the appropriate geographic scale, especially at the regional and subregional levels, and, according to need, undertake selected sectoral or thematic assessments;

(c) These regular process assessments will draw, as far as possible, upon assessments made at the global and supra-regional levels, at the regional level and, where appropriate, at the national level. The regular process will therefore seek to stimulate regional, subregional and national assessment processes by promoting capacity-building, strengthening the knowledge base, encouraging inter-comparability and facilitating networking among institutions and individuals concerned with marine assessment;

(d) These assessments will be underpinned by consistent analytical frameworks and data standards, and will deliver products to communicate effectively to policymakers. In parallel, the regular process will build institutional and individual assessment capacity, and promote necessary research.

Scope of the regular process

44. It is also critical to clearly define the scope of any assessment. The Group of Experts proposes that the scope of individual assessments under the regular process will be defined in terms of:

(a) *Geographical coverage*. The individual assessments under the regular process will be concerned either with assessments that cover all the world's oceans and seas ("global assessments") or with assessments that cover issues relevant to several ocean regions ("supra-regional assessments");

(b) *Sustainability*. Whenever relevant to an assessment, the regular process will make arrangements for assembling, analysing, assessing and integrating information on the environmental, economic and social aspects — the three pillars of sustainable development. It will cover all human activities that utilize and have the potential to impact the marine environment;

(c) *Analytical framework*. Unless special circumstances warrant another approach, the regular process will use the framework of drivers – pressures – state – impacts – responses (DPSIR) in its analyses and promote cross-sectoral ecosystem approaches to assessment. As relevant, it will seek to identify the management responses that have already been taken, to evaluate their success in addressing the relevant pressures and improving the state of the marine environment,[3] and to evaluate future options for response and their likely outcomes and risks, as well as the costs of inaction, as a basis for decision-making;

(d) *Vulnerability*. When conducting any assessment, the regular process will seek to identify the groups of people, natural processes and non-human species and habitats that are particularly vulnerable to the pressures identified, and evaluate the risks to them;

(e) *Forward-looking*. Whenever relevant to an assessment, the regular process will seek to include not only conclusions on the current state of the marine environment and related human activities but also outlooks on future states, using accepted procedures that are fully documented.

Guiding principles for the regular process

45. The Group of Experts proposes that the eight principles noted in paragraph 39 above (and elaborated in paras. 4.4-4.12 of the full assessment of assessments report) should guide the establishment and operation of the regular process. They should be reflected in the particular practices established for, and by, the regular process and in its institutional arrangements.

Best practice guidance on key design features for the regular process

46. The Group of Experts recommends the best practices summarized in paragraph 40 above (and elaborated in the full assessment of assessments report in paras. 4.13-4.82) for each of the first 11 key design features identified. They should be used in the development and implementation of the regular process. As noted above, some of the design features will need to be addressed in the decisions establishing the

[3] "Response assessments" identify and evaluate responses that reduce human contributions or vulnerabilities to environmental changes.

regular process, while more detailed aspects would be agreed by the institutions that manage and guide the process considered below.

47. The practices which are especially important in the initial establishment of the regular process cover:

(a) *Participation — roles and responsibilities*. Within the agreed institutional arrangements, the respective roles and responsibilities of Governments, experts, the secretariat and other stakeholders should be clearly articulated in order to avoid misunderstandings, promote transparency and ensure the integrity and influence of the regular process;

(b) *Assessment procedures*. The scientific credibility of an assessment can be significantly affected by the approach taken on a number of procedural questions, such as quality assurance, nomination and selection of experts, peer review and the treatment of uncertainty and lack of consensus among experts. These procedures should be agreed in advance. In some cases, this should be done generally for the whole of the regular process; in the remaining cases, it should be done in advance of each individual assessment. These procedures should be documented in assessment reports in the interest of transparency and accountability;

(c) *Capacity-building and networking*. The initial stage of the regular process must include effective steps to identify the areas in which capacities need to be developed. The process will not itself be a prime means for building capacity, but it needs to identify what is needed for the individual assessments under the process and to encourage other agencies to meet those needs. At the same time, the initial cycle of the process needs to create the knowledge and methods of analysis needed to support its assessments and to strengthen marine assessment in general, and to improve networking among existing assessment processes on the state of the marine environment, including social and economic aspects;

(d) *Post-assessment evaluation*. Since one of the founding principles of an effective assessment process is that it should be iterative and adaptive, it is vital to agree on procedures to evaluate both assessment products and the regular process itself. This should include experts, policymakers and other users (e.g., private sector), comprising both those involved in the assessment and those who have not been involved in any way.

B. First cycle of the regular process, 2010-2014

48. In order to support adaptive management, the regular process will need to go through a succession of cycles. The products of the first cycle need to be specified at the outset. The products and process of future cycles will be adjusted as a result of the evaluation of previous cycles. These iterations will allow the regular process to incorporate learning into its work and to better target limited resources, concentrating on the fundamentals of improving marine assessment.

49. The Group of Experts recommends a first five-year cycle of the regular process, from 2010 to 2014, which can demonstrate concrete achievements in relation to the opportunities identified in the introduction. During the early years (2010-2012), certain preparatory, supporting products will be developed to guide and strengthen marine assessment and support the objective of the process. During

the later years (2013-2014), the first version of an integrated assessment of the oceans would be produced, establishing a baseline for future global assessments.

Fundamental building blocks

50. All cycles of the regular process will need to include the following fundamental building blocks if they are to continue to deliver improvements in marine assessments. The first steps, however, are especially important. They will need to:

(a) *Build capacity* at both individual and institutional levels. As a first step, to serve as a planning tool and to create a focus for existing efforts, the regular process should draw together the capacity-building needs identified as priorities in the assessment of assessments report; where these needs cannot be met by existing capacity-building arrangements, the process can facilitate and promote a wide range of partnerships to satisfy them;

(b) Improve *knowledge and methods of analysis*. As a first step, the regular process should identify priorities for filling the information gaps identified in the assessment of assessments report and create and improve arrangements for assembling both economic and social information and physical, chemical and biological data from sources at the regional and national levels, and for managing that information. It should develop agreed methods for using traditional knowledge and identify or develop the analytical tools and procedures necessary for integrated marine assessment;

(c) Enhance *networking* among assessment processes, international monitoring and research programmes and associated institutions and individuals, as considered in the next section;

(d) Create tools and strategies to ensure effective *communication* with all relevant stakeholders, including policymakers, the scientific community and the general public at the global and regional levels.

51. The preparatory, supporting products of the first cycle of the regular process, considered further below, will initiate steps to improve knowledge and methods of analysis, build capacity, enhance networking and initiate effective communications.

Networking with global, regional and national assessment processes

52. Enhanced *networking* with and among other assessment processes and international monitoring and research programmes should be an early goal of the regular process. The process also needs to build relationships with civil society and the private sector.[4] A wide range of individuals and organizations are likely to have useful data, information and methods for marine assessments.

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[4] This includes specialized and sectoral users of the oceans, through professional and industry associations, primarily at the global level, for fisheries, oil and gas, tourism, aquaculture, fertilizer production, mining, renewable energy, shipping invasive species, ports and harbours and others, as well as specialized research institutes (private, academic). The World Ocean Council (www.oceancouncil.org) has recently been established as an international business and industry alliance for corporate ocean responsibility and could facilitate connections between the regular process and industry sectors. Because international industries increasingly follow the same practices wherever they operate around the world, they can be influential in identifying

53. The regular process will be in a position to identify and stimulate networking among institutions and experts at the regional and supra-regional levels, within and across disciplines and among sectoral and thematic assessments. This can enhance the sharing of knowledge, expertise, methods and lessons learned as well as progress towards common data standards and guidelines. It will help to avoid duplication of effort and improve compatibility of approaches. In all these relationships, the goal should be to promote information exchange and the infrastructures that make it possible. This should include agreement on data policies and arrangements to catalogue and maintain data and information for use in future assessment iterations. As these networking relationships develop, the contributions of partners should be mutually acknowledged in the products of the regular process and its collaborators. These relationships can be built into the process through its management and expert mechanisms and through a network of focal points, considered below. The development of preparatory, supporting products for the first cycle of the regular process will help construct and test networking mechanisms.

54. At the global level, the regular process will be a source for marine components of global assessments covering wider fields (for example, the follow-up to the Millennium Ecosystem Assessment on biodiversity and ecosystem services or the Global Environment Outlook). It is especially important that the regular process promote and build upon existing schemes for compiling comparable, interoperable data from different regions. It will need to establish linkages with:

(a) Global monitoring and research programmes, such as the Global Ocean Observing System, the International Geosphere-Biosphere Programme and the Census of Marine Life, to improve the comparability and interoperability of data across regions and at the same time ensure that this data is available for regional assessments;

(b) Global conventions and agreements undertaking regular assessments, to determine how these processes and the regular process might support each other, that is, how these assessments and associated data may be used for purposes of the regular process, how they could contribute to filling information gaps and to developing a common global framework for data collection and quality and how these other processes might benefit from the regular process in developing their own programmes;

(c) Intermittent global reporting and assessment initiatives, to consider possibilities for harmonization of assessment time frames so that they and the regular process can more easily draw upon and assist each other;

(d) The United Nations Statistics Division and the Global Environment Outlook, to determine how their various information flows can best be aligned.

55. The regional level is a major focus of marine assessment. Networking with regional processes will therefore be vital for the regular process. It will need to create mechanisms for discussion and cooperation with appropriate regional seas programmes, regional fisheries bodies, regional marine science bodies (where they exist) and other relevant regional organizations to address such questions as how the

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and promoting the application of "best practice" response measures in a given sector. Their input to the regular process in developing terms of reference for an assessment, nominating experts and ensuring that assessment products effectively target user communities will be especially valuable.

outputs they produce for their own purposes can feed into and inform the assessments made by the regular process, how the process can help regional assessments improve and make them more influential, and how data-management arrangements can be used for both regional and global purposes. Regional linkages with freshwater and land-based assessments, as well as climate change assessments, will be important. In developing these networks, the regular process will need not only to work with the staff of regional bodies but also to involve national experts (especially where there are no existing regional bodies).

56. Because so many policies and measures for marine problems are adopted at the regional and national levels, the regular process will assist the various regional assessment activities by providing a clear overview of the global context within which they function, including environmental, economic and social aspects, and of the linkages among regions. Moreover, since stakeholder engagement at the global level is inevitably limited, the regional level can play an important part in enabling regional organizations, associations and networks to make their input to the regular process. This can enhance both the legitimacy and policy relevance of inputs to the process, and thus its outputs. Enhanced legitimacy and relevance at regional scales is also likely to strengthen regional support for policy and management actions based on the outputs of the regular process.

Assessment products of the first cycle (2013-2014)

57. The crucial added value of the regular process will be its ability to deliver *fully integrated assessments*, bringing together environmental, economic and social aspects. The centrepiece of the package of products that the first cycle will deliver should therefore be a first version of an integrated assessment of the world's oceans and seas. In order to provide a global overview, in-depth, integrated assessments in some regions will need to be combined with less advanced assessments in others; they will bring together what is known about the environmental aspects and in parallel begin to assemble and integrate the available economic and social data. This will give a much better picture than is currently available as a basis for decision-making. It can also help to identify potential topics for future cycles of the regular process.

58. As part of this integrated assessment, there could also be a thematic assessment of a major cross-cutting aspect of the world's oceans, such as food security. This would help develop novel cross-disciplinary and cross-sectoral approaches.

Supporting products of the first cycle (2010-2012)

59. In the early years of the first cycle of the regular process, the strategy and timetable for the production of the integrated assessment will need to be developed. Likewise, before the end of the first cycle, arrangements will need to be agreed upon for the eventual evaluation of the assessment and the process that produced it.

60. Preparatory, supporting products will be needed to develop the fundamental building blocks of marine assessment for the particular needs of the first cycle. They will improve knowledge and methods of analysis, and thus strengthen capacity. They will build on, guide and improve existing assessments, especially at regional levels, and help to move them towards a common approach. This, in turn, will lead to improved iterations of existing assessments and of those of the regular process.

The workshops described in appendix III below will initiate communication and networking among existing assessment processes at the global, regional and, where appropriate, national levels to develop the following products:

(a) A set of common questions and issues to be addressed (in differing degrees of elaboration) across all regions;

(b) Agreed assessment methods for the datasets in different scientific fields;

(c) An agreed approach to evaluating the risks that are identified;

(d) A common framework and guidelines for data assembly. The framework and guidelines would provide a background against which future data collection might be organized by regional and national bodies so that the data can be more effectively compared and used for different purposes. They would aim to strengthen data quality and interoperability. The framework and guidelines will need to take into account the limitations in regions where data is sparse and to include arrangements for the use of traditional knowledge. In open ocean and deep-sea areas, further progress on biogeographic classification of ocean realms will help provide a framework and rationale for data collection and assessment efforts;

(e) An agreed approach for integrating the data and information and analytical results across sectors, ecosystem components and environmental, economic and social aspects;

(f) Methods to process digitally the available data, including the methodologies for quality assurance, modelling and the metadata that should eventually be assembled.

61. The first version of a global, integrated assessment will, inevitably, have shortcomings. It will be for future iterations, in the light of an evaluation of both products and process of the first cycle, to address these shortcomings and to produce ever better integrated assessments. Future cycles will enable the tools and methods to be further developed for bringing together information and assessments available at the regional and other levels on environmental, economic and social aspects.

62. Thus, the preparatory products described above will be a first step towards the development and application of more refined methods and tools for assessment, including:

(a) Interdisciplinary methods of analysis that address environmental, economic and social aspects of the state of the marine environment;

(b) Methods and frameworks to strengthen the assessment of marine habitat quality and extent, as habitat is the property that inherently integrates many ecosystem features and pressures from human activities;

(c) Methods to predict the risks and potential consequences (environmental, economic and social) of changes in the marine environment;

(d) Methods and approaches for scaling up and scaling down existing assessments to provide a more complete assessment of the state of the marine environment;

(e) Indicators and reference points that are cost-effective, facilitate supra-regional and global overviews and establish a basis for comparing status and trends over time;

(f) Initiatives to harness the powerful integrative capacity of the Internet to make data openly accessible and to incorporate new dynamic aspects of Internet data management to keep pace with the anticipated rate of change in ocean conditions.

C. Options for institutional arrangements of the regular process

63. The present section covers six institutional aspects: (a) the relationship of the regular process to the United Nations; (b) the establishment of a management and review body for the regular process; (c) a panel of experts for the regular process; (d) an additional pool of experts for the regular process to draw upon; (e) a secretariat for the regular process; and (f) focal points within Governments, international organizations (global and regional), the private sector and civil society organizations to facilitate interaction and collaboration with the regular process. On the principle that "form follows function", it first identifies functions and then considers options for an institutional mechanism, setting out advantages and disadvantages of the various options.

64. It is important to recall the need for structured dialogue between decision makers and experts — in defining the objectives and scope of an assessment and the key questions for which decision makers are seeking answers and in conveying assessment findings (chapter 4 of the assessment of assessments report). The experts need to clearly understand the needs of decision makers at the outset, while decision makers must be aware of any major limitations in available knowledge and methods that will affect assessment products. Regular updates for decision makers on the progress of an assessment will allow course corrections to be made and a full discussion between experts and decision makers will help to clarify assessment findings and any assumptions, risks and uncertainties.

Options for relationship with the United Nations

65. The United Nations General Assembly adopted its resolution 57/141, welcoming the recommendation of the World Summit on Sustainable Development to establish a regular process "under the United Nations". This indicates that it is the General Assembly to which the regular process is accountable.

66. With respect to establishing the regular process, the General Assembly can set its overall objective, scope and principles, agree on its institutional elements, including its composition and terms of reference, and make provision for periodic evaluation of the process and its products. It could also endorse more detailed guidance on best practices to be applied in the process. The Assembly can also take decisions on the proposed first cycle of the process, considered above.

67. In the operation of the regular process, three functions would benefit from consideration by all States Members of the United Nations and a wider range of stakeholders:

(a) The specification of the objective and scope of each individual assessment to be undertaken by the regular process, key questions to be answered and primary target audiences, in order to ensure that assessments are relevant for decision makers;

(b) Examination of the findings of assessments in order to draw out their implications for consideration by the appropriate decision-making body (or bodies);

(c) Periodic evaluations of the regular process and its products.

68. These functions involve too much detail to be assigned directly to the General Assembly. An informal United Nations meeting would allow more in-depth consideration, a free flow of discussion and participation by an appropriate range of stakeholders.

69. The functions noted above would be undertaken for each cycle of the regular process, although it may be practicable to amalgamate the work at the end of one cycle with that at the start of the next. It will be important to ensure that experts responsible for an assessment are available for dialogue in these meetings.

70. Two main options for relationship with the United Nations can be identified:

(a) The United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea (ICP), if the United Nations General Assembly so decides;[5]

(i) *Pro*. ICP is an established forum with arrangements for participation by all States and an appropriate range of other stakeholders. Since it meets annually, it could be asked to consider progress reports from the regular process in the same way as it considers progress reports from UN-Oceans.[6] It can submit "agreed elements" for consideration in the development of General Assembly resolutions, so it has a route for suggesting calls to Governments and global and regional bodies to undertake specific actions. At the same time, the regular process, through its assessments, could assist the Assembly in deciding the topics that ICP will consider and in providing ICP with the means to keep up-to-date on progress made in relation to issues it has previously addressed;

(ii) *Contra*. ICP is a non-permanent forum that has been subject to renewal every three years. In addition, since it normally focuses on a specific aspect of the oceans selected by the General Assembly every year, the special skills of those attending ICP may not be ideally suited to developing the objective, scope and other aspects of a proposed assessment under the regular process at the beginning of a cycle, or for considering the report and findings at the conclusion of a cycle. Moreover, it may be difficult to allocate sufficient time for these discussions in the years when an assessment is initiated or concluded, depending on other topics before ICP. These issues of attendance by the relevant, specialized decision makers and sufficient time for dialogue (including with the assessment experts) are likely to be less problematic in years when ICP considers only progress reports on the regular process;

(b) Alternatively, the General Assembly could convene ad hoc meetings to carry out the three functions referred to in paragraph 67 above. One model is the ad hoc working group of the whole of the Assembly convened to recommend a course

[5] It should be noted that the General Assembly, in paragraph 165 of its resolution 63/111, decided that ICP would focus its discussions at its 10th meeting in 2009 on the implementation of the outcomes of ICP, including a review of its achievements and shortcomings in its first nine meetings.

[6] UN-Oceans is the inter-agency coordination mechanism on oceans and coastal issues.

of action regarding the regular process.[7] Another model is the ad hoc open-ended informal international workshops, such as those convened by the Assembly in June 2004 and June 2005, in conjunction with ICP, to consider the establishment of a regular process;[8]

(i) *Pro.* An ad hoc meeting is more likely to provide sufficient time for dialogue (including between experts involved in the assessment and decision makers) and discussions might be more focused than would be possible in ICP. While an ad hoc meeting of the whole allows participation by States and permanent observer organizations at the United Nations, the international workshops allow participation by States, a wider range of international organizations representative of other stakeholders and, where appropriate, experts involved in an assessment team. The report of an ad hoc meeting, including any "conclusions", goes directly to the General Assembly for its consideration;[9] in ICP, the concerns of the regular process and related "agreed elements" would only be one of several sections in the report of the meeting. If an ad hoc meeting were convened in conjunction with ICP (for example, when the topics under consideration in ICP were likely to involve the same experts as would be relevant for consideration of a given assessment), there might be logistical and financial advantages for Governments;

(ii) *Contra.* If meetings are convened on an ad hoc basis, there is no guarantee that they will be held, and there will be less continuity from one meeting to the next. If such meetings are not convened in conjunction with a relevant oceans meeting, they would have to be resourced separately; particular problems might be encountered in ensuring the participation of developing countries. In addition, the opportunity for States Members of the United Nations and other stakeholders to discuss interim progress reports (between ad hoc meetings), including with experts from the regular process, is less apparent, although ICP might still be utilized.

71. Whichever option is selected, it would be advantageous if the meeting were part of a long-standing or permanent structure which allows for regular review of the regular process and its products.

Options for a management and review body

72. The regular process will require a body to manage and oversee its operation and to ensure that agreed procedures are followed in the development and conduct of assessments. The Group of Experts considered three potential elements of its membership: Government members; members drawn from intergovernmental organizations; and additional members from the private sector, the scientific community and civil society.

73. This management and review body will enhance continuity and consistency in the operation of the regular process and provide a means for the "managers" to engage in regular dialogue with the experts responsible for any assessment. It is

[7] See resolution 63/111.

[8] See General Assembly resolutions 58/240 and 59/24.

[9] The "conclusions" of the second International Workshop on the regular process were endorsed by the General Assembly in its resolution 60/30 establishing the "assessment of assessments" process.

necessary to be clear, however, about the distinct roles of the management body and the experts in relation to the final approval of assessment reports. The management and review body will have a role in reviewing the conclusions and findings of an assessment and their implications for policy and decision-making, in particular any response options presented and the risks associated with them. It should not modify the experts' evaluations, but rather build upon them to ensure policy relevance and promote follow-up actions by the appropriate decision-making authorities. The management and review body should be encouraged to report fully on its discussions and any conclusions and recommendations to the United Nations General Assembly, through ICP or an alternative ad hoc meeting. To avoid any inappropriate influence on the experts carrying out individual assessments, the management and review body should not be involved directly in substantive technical work. The experts should have the final word with respect to the accuracy and completeness of the factual analyses.

74. It is also necessary to be clear about the role of the management and review body in relation to the role of all States Members of the United Nations described in paragraph 67 above. The Group of Experts considers that a smaller, representative body of this kind, which can be thought of as a specialized working group of the larger United Nations membership, can do the following:

(a) Conduct focused discussions of the objectives, scope and terms of reference for any particular assessment (subject to specifications from the United Nations General Assembly and taking into account discussions in ICP or an ad hoc meeting);

(b) Through its "review" role, lay the groundwork for productive discussion of assessment findings in the United Nations and other relevant decision-making bodies. Its purpose is not to second-guess the findings and conclusions of the expert assessment, but rather to present a considered view of their implications for policymakers and the various global and regional bodies involved in ocean governance. This would be especially important in the case of a global, fully integrated assessment covering all aspects of the oceans.

75. The basic functions of a management and review body can be summarized as follows:

(a) To oversee the regular process in accordance with its mandate; to agree on such matters as modalities for communication with and participation by stakeholders, means for transparency and accountability, and procedures for nomination and selection of experts, quality assurance, access to information and peer review; to ensure that responsibilities for authors, reviewers and the secretariat are clearly articulated;

(b) To elaborate decisions and guidance from the United Nations General Assembly on the objectives, scope and terms of reference for an individual assessment, taking into account any further discussions in ICP or the alternative ad hoc meeting;

(c) To initiate and approve proposals for assessments to the extent that this is not reserved for the General Assembly;

(d) To approve the programme/budget and finances of the regular process, and partnerships to support its work;[10]

(e) To give final approval to the selection of experts;

(f) To guide and oversee the development, organization and conduct of each individual assessment under the regular process, including approval of its objectives and scope, implementation plan and related budget and communications strategy; to consider regular progress reports from the assessment team and respond to any questions from it seeking clarification about its activities;

(g) To review and comment on the final products of each individual assessment under the regular process;

(h) To promote networking among institutions engaged in marine assessment;

(i) To provide for a post-assessment evaluation (internal and external[11]) of each individual assessment under the regular process and ensure that the evaluation outcome is followed up in the practices and products of the process.

76. These functions require that members of the management and review body are individually expert in marine scientific disciplines (natural or social sciences) and/or marine law and policy fields and, collectively, have broad expertise in both marine environmental assessment, including socio-economic aspects, and in marine policy and management. The appointment of high-profile individuals would add to the quality, standing and visibility of the regular process. The assessment of assessments report identifies four basic options for the composition of the management and review body (see further elaborations in para. 4.85 of the assessment of assessments report). It can be composed:

(a) Solely of Government members;

(b) Solely of members drawn from intergovernmental bodies (that is, members of the secretariat/staff of those bodies);

(c) Of a mix of members from Governments, intergovernmental and non-governmental bodies (including the private sector, scientific organizations and civil society);

(d) Of an expert network of individuals and institutions with a smaller, core management group drawn from the network.

77. In practice, the management and review of the regular process will need to have a substantial majority input from States so that the process is responsive to their policy and decision-making needs and in order to fully engage States in the process. However, by involving other stakeholders in a balanced way, the influence of assessments (legitimacy, relevance and credibility) will be strengthened.

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[10] Subject to the financial arrangements agreed upon for the regular process and the budget approval procedures for the United Nations Secretariat and other relevant "host" institutions for the regular process.

[11] Meaning a review team comprised of individuals involved in the assessment (both "users" and the experts who produced the assessment) and of individuals who were not involved in the assessment in any way.

78. The management and review body should ideally work by consensus. However, it will be necessary to decide how the management and review body should proceed if consensus cannot be achieved. Experience in other forums suggests the principle that, while participants other than representatives of States should be free to speak and make proposals, decisions where consensus cannot be reached should be reserved to the State members. (However, if the expenditure on the regular process is carried on the budgets of international organizations, decisions with budgetary implications will need to be taken in accordance with the relevant organizations' financial procedures.)

Membership of the management and review body: member States

79. Addressing first the involvement of States, there are two broad options:

(a) The management and review body could be an open-ended body, open to all States Members of the United Nations.[12] In practice, such an open-ended body would need to have a bureau or executive committee, since an open-ended meeting is not a suitable forum for dealing with some of the more routine decisions described in paragraph 75 above;

(i) *Pro.* This would ensure that all States are able to participate in at least some of the work of the management and review body. An open-ended meeting might be appropriate for the "review" role contemplated in paragraph 74 (b) above;

(ii) *Contra.* Even for a limited range of work, an open-ended meeting would be relatively cumbersome for effective management and review, and would be costly. Moreover, in view of the institutional relationship with the United Nations envisaged above, such a meeting would be redundant;

(b) Membership of the management and review body could be restricted to a representative subset of States Members of the United Nations, with the membership rotating among member States over successive terms. Depending on its size, this body may need a smaller executive committee;

(i) *Pro.* This can be tailored to produce a management and review body which is large enough to contain the necessary range of experience and regional balance to ensure policy relevance and legitimacy, and fully engage States, but still small enough to be effective for executive decisions and to reduce overall expenses;

(ii) *Contra.* Some States may feel that their concerns are not adequately taken into account in developing an assessment under the regular process or in reviewing its findings, or they may not be well informed of developments in the regular process, with the result that they do not pay much attention to assessment findings and their implications.

[12] The Intergovernmental Panel on Climate Change is an example of this approach. It is open to all member countries of WMO and UNEP. Its Bureau has 30 Government members. Major decisions (for example, the election of the Panel's Chairman and Bureau, the structure and mandates of the working groups and task forces, and the adoption of the Panel's workplan and budget) are taken in plenary sessions. Plenary sessions of the Panel may be attended by hundreds of officials and experts from member countries.

80. The means to appoint State members of the management and review body could be modelled on the method used to establish the Ad Hoc Steering Group of the assessment of assessments: the Government members were appointed by the President of the United Nations General Assembly in consultation with Member States and regional groups, ensuring an adequate range of expertise and on an equitable geographical basis.

81. On balance, the Group of Experts recommends that the management and review body should have a limited number of Government members appointed as specified in the paragraph above. The number could be set at from 18 (as in the Ad Hoc Steering Group[13]) to 36 (to ensure a wider range of involvement and expertise). It should be noted that if the option of ad hoc meetings for relationship with the United Nations is selected, this would allow for more in-depth discussion of proposed assessments and their findings among all States Members of the United Nations. Consequently, the number of States members of the management and review body could be on the lower end and it could concentrate on "management" rather than "review" functions.

Membership of the management and review body: intergovernmental organizations

82. The work of the regular process will inevitably touch upon the work of a substantial number of United Nations specialized agencies and other global bodies. To ensure proper linkages with these bodies, it is highly desirable that they be associated formally with the work of the regular process. The question then is which should be represented.

83. The Ad Hoc Steering Group of the assessment of assessments included six entities. Their work is so closely concerned with the issues that the regular process will address that the Group of Experts recommends that they should all be involved. The six are:

(a) FAO;

(b) The Intergovernmental Oceanographic Commission of UNESCO;

(c) The International Maritime Organization (IMO);

(d) The International Seabed Authority (ISA);

(e) UNEP;

(f) WMO.

84. Another seven bodies could also be considered since their activities are relevant to important aspects of the regular process, including capacity-building. Three of these organizations (marked *) are sponsors of the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP)[14] and are

[13] That is, five member States from the African Group, five member States from the Asian Group, two member States from the Eastern European Group, three member States from the Latin American and Caribbean Group, and three member States from the Western European and Other States Group.

[14] The current members of GESAMP are IMO, FAO, the Intergovernmental Oceanographic Commission/UNESCO, WMO, the United Nations Industrial Development Organization, the International Atomic Energy Agency, the United Nations and UNEP. The World Health Organization is a former member.

therefore already concerned with marine scientific work. Another group (marked †) comprises members of UN-Oceans. The seven bodies are:

(a) The secretariat of the Convention on Biological Diversity†. The secretariat, in particular under the Jakarta Mandate, plays an important role in synthesizing and contributing to scientific and technical knowledge of the marine environment. Its inclusion could help to reduce overlaps and avoid gaps between its work and that of the regular process;

(b) The Division for Ocean Affairs and the Law of the Sea of the Office of Legal Affairs of the United Nations Secretariat*†. The Division serves as the Secretariat of the United Nations Convention on the Law of the Sea and the related United Nations fish stocks agreement. It substantively assists the United Nations General Assembly in its annual review and evaluation of developments relating to ocean affairs and the law of the sea, which includes preparation of the annual report of the United Nations Secretary-General as the basis for these discussions. The Division also substantively services any relevant processes that are established by the Assembly, for example, ICP and the ad hoc meetings noted above;

(c) The International Atomic Energy Agency (IAEA)*†. The impact on the marine environment of human uses of nuclear energy is an issue of considerable concern in many parts of the world. IAEA has a laboratory specializing in collecting information on radioactivity in the marine environment and its impacts;

(d) The International Bank for Reconstruction and Development (IBRD, World Bank)†. The World Bank is very important for all aspects of financing and capacity-building, and supports substantial projects relating to sustainable ocean use;

(e) The United Nations Development Programme (UNDP)†. The capacity-building functions of UNDP are significant for many of the issues with which the regular process will need to deal and the Programme has a large portfolio of Global Environment Facility International Waters projects in large marine ecosystems;

(f) The United Nations Industrial Development Organization (UNIDO)*†. The capacity-building functions of UNIDO may be significant for many of the issues with which the regular process will need to deal;

(g) The World Health Organization (WHO)†. WHO deals with human health, which can be significantly affected by many aspects of the marine environment, such as microbiological contamination of seafood. It supports both problem diagnosis and response initiatives. There are therefore important links between its work and the regular process;

(i) *Pro*. Greater cooperation and collaboration among the international institutions with a role in ocean assessment and management is essential. If the relevant bodies are not engaged with the regular process, they are unlikely to devote sufficient energy and commitment to making it work;

(ii) *Contra*. The more international bodies involved, the more unwieldy the management and review body becomes and the more expensive is the cost of its meetings.

85. On balance, the Group of Experts recommends that all 13 organizations should be entitled to appoint representatives to the management and review body.

Other management and review body membership

86. The expert input of scientists (including social scientists) and other stakeholders will come through the mechanisms for expert assessment discussed below. As considered in chapter 4 of the assessment of assessments report, there are arguments for including additional stakeholders in the management and review body to contribute to its functions. Five fields seem particularly relevant in this context:

(a) *Expertise in conservation of nature.* The International Union for Conservation of Nature brings together over 80 Government members and some 100 additional Government agency members, together with over 900 non-governmental organization members, all active in conservation on land and in fresh and salt water. Another option in this category would be to include individual non-governmental organizations on a rotational basis;

(b) *Expertise in the natural sciences.* The Scientific Committee on Oceanic Research of the International Council for Science (ICSU) is the non-governmental forum linked to UNESCO for discussion of international ocean science policy issues and coordination of marine scientific research. ICSU comprises 114 national science bodies and 29 international scientific unions, and is increasingly called upon to speak on behalf of the international science community and provide advice on science issues;

(c) *Expertise in the economic and social sciences.* The International Social Science Council is a body parallel to ICSU and the primary international body representing the social and behavioural sciences at the global level. Its members and associate members comprise international non-governmental bodies (associations or unions) on specific social science subjects, national social science bodies, national, regional and international governmental and non-governmental agencies, and foundations and organizations with major interests in the social sciences;

(d) *Expertise in business and industry.* Much business activity is focused on or affects the sea. As stakeholders in the regular process, industry representatives can contribute to the design, conduct and review of individual assessments and provide advice on social and economic aspects of specific industries. They can also assist in the analysis of response options. The emerging World Ocean Council (see footnote 4) or the many sectoral bodies (such as the International Association of Oil and Gas Producers or the International Fertilizer Industry Association) could identify potential management and review body members;

(e) *Expertise from indigenous peoples.* Indigenous peoples from all regions of the world depend upon the marine environment. Their rich and detailed traditional knowledge reflects and embodies a cultural and spiritual relationship with the land, ocean and wildlife. They meet together through various networks (e.g., IPACC (Indigenous Peoples of Africa Coordinating Committee); RAIPON (Russian Association of Indigenous Peoples of the North); and ICC (Inuit Circumpolar Council)) and have varying roles within the international community (see box 4.3 and annex II (Arctic Climate Impact Assessment) to the full assessment of assessments report);

(i) *Pro.* As representative of relevant professions, disciplines, sectors and civil society, these members can speak directly on the views and concerns of their constituencies with respect to assessment design and findings. They can also ensure that linkages are properly considered between the marine and other

environments, among scientific disciplines and across sectors affecting the marine environment. They will be important in ensuring dialogue and interaction between their constituencies and the regular process, including follow-up to assessment findings;

(ii) *Contra*. The counter-argument to further expanding the membership of the management and review body is, again, that a larger membership makes for unwieldy meetings and increases the costs.

87. Should it be decided that members such as those mentioned in paragraph 86 above are to be appointed to the management and review body, an appropriate process for selecting candidates would need to be developed. Perhaps the most practicable process would be for Government members of the management and review body to select members from short lists of candidates put forward by the bodies concerned, in consultation with States Members of the United Nations and regional groups.

88. On balance, the Group of Experts recommends that the management and review body should include five additional members, representing the interests described in paragraph 86 above and appointed as set out in paragraph 87 above.

Recommendations for membership of the management and review body

89. In summary, the recommendation of the Group of Experts is that there should be a management and review body for the regular process, consisting of:

(a) Eighteen to 36 members appointed by the President of the United Nations General Assembly to represent Member States, in consultation with Member States and regional groups, ensuring an adequate range of expertise and on an equitable geographical basis, and providing for rotation of membership over time;

(b) Thirteen members, one each from FAO, the Intergovernmental Oceanographic Commission/UNESCO, IMO, ISA, UNEP, WMO, the Convention on Biological Diversity secretariat, the Division for Ocean Affairs and the Law of the Sea, IAEA, IBRD, UNDP, UNIDO and WHO;

(c) Five additional members selected on the basis of shortlists of candidates submitted by the International Union for Conservation of Nature, the International Council for Science/Scientific Committee on Oceanographic Research, the International Social Science Council, a body or bodies representing commercial interests in the oceans and a body or bodies representing indigenous peoples.

90. This body will require a smaller executive committee to perform routine management functions.

Options for a panel of experts for the regular process

91. The regular process will need a high level of expert input from a wide range of specialized fields. The Group of Experts considers a crucial part of the institutional arrangements for the process to be a panel of experts that can arrange for expert input. Such a panel must be composed of experts who are leaders in their own fields, have the ability to work in an interdisciplinary way and are able to present complex material clearly for diverse audiences. It must be clear, however, that panel members serve in an individual, expert capacity and do not represent any interests in a partisan or advocacy manner. Members may be drawn from any type of affiliation

(e.g., Government, non-governmental organization, intergovernmental organization, the private sector, academic and research institutions, holders of traditional knowledge).

92. The functions of the panel of experts can be formulated as follows:

(a) To undertake assessments;

(b) To draft detailed terms of reference, as necessary, and related implementation plans, budgets and communications strategies for each individual assessment under the regular process for approval by the management and review body;

(c) To approve the reports and conclusions for each individual assessment under the regular process;

(d) To advise the management and review body on proposals for individual assessments under the regular process and on other matters, as requested;

(e) To identify, develop and recommend methods, approaches and standards for data collection and analysis and for assessment of the marine environment;

(f) To select experts for membership in the panel, subject to confirmation by the management and review body, and for individual assessment teams under the regular process;

(g) To promote networking among marine assessment processes and individual experts.

93. The composition of the panel should reflect geographic and gender balance, ensure a mix of disciplinary expertise and involve participants from all regions in order to take into account different regional circumstances and experience. All the main disciplines in the natural and social sciences, including policy, and law and traditional knowledge should be considered for inclusion.

94. There are two main options to discharge the functions of the panel of experts:

(a) To create a new panel of experts of, say, 20 members;

(b) To employ the existing GESAMP, comprised of 25 to 30 members, subject to any modifications needed in the mandate, composition and institutional arrangements of the Joint Group.

95. The arguments for and against these alternatives can be summarized as follows:

(a) *New expert panel*. A new panel would take some time to establish and organize, and to develop a reputation. As another expert body specialized in the marine environment, it could lead to competition with GESAMP over scarce financial resources. However, a new panel would be tailored to meet the needs of the regular process, including its objective and scope;

(b) *GESAMP*. GESAMP is an existing body with an established reputation for the credibility and quality of its outputs, which to date have focused on the natural sciences. Its mandate would have to be extended to include the functions proposed for the panel of experts. However, the more critical difficulties that need to be considered are the management and reporting structure of GESAMP:

(i) The management structure of GESAMP[15] does not fit easily with the proposed management and review body structure, which envisages membership by States and other stakeholder organizations in addition to intergovernmental agencies. However, if the panel of experts reported directly to the United Nations General Assembly through an ad hoc meeting able to devote sufficient time to defining the objectives and scope of proposed assessments and to considering assessment reports and findings, as considered in paragraph 70 (b) above, there is the alternative of leaving the more routine "management" functions included in paragraph 75 above to the Joint Group's existing inter-agency Executive Board and Executive Committee, possibly with an expanded membership of intergovernmental bodies;

(ii) GESAMP presently reports to all its sponsoring organizations. It would be necessary to specify additional reporting arrangements for the Joint Group in respect of the functions of the regular process, in accordance with the reporting procedures agreed upon for the process.

Recommendations on the panel of experts

96. On balance, the Group of Experts considers that the needs of the regular process will be better served by establishing a new panel of experts.

97. For a new panel of experts, it will be necessary to develop the procedures, profiles and criteria for selection of the experts, such as those used to select the assessment of assessments Group of Experts (see annex III to the assessment of assessments report). The appointments could be made by the management and review body for a period of five years in the first instance (on the assumption that the proposal for a five-year initial cycle is adopted). Thereafter, members would be selected by the panel of experts, subject to confirmation by the management and review body. Following the first cycle, a periodic partial renewal should take place, so that terms are staggered to ensure a mix of continuity and fresh ideas. As part of the arrangements, to ensure turnover, panel members should serve terms of no more than three to five years and membership should be limited to two consecutive terms.

98. Whichever option is chosen, the Group of Experts stresses that all members of the Expert Panel — whether experts from the private sector, Government, academic and research institutions or another affiliation — will require substantial amounts of dedicated time to devote to the work of the regular process.

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[15] GESAMP is sponsored jointly by IMO, FAO, the Intergovernmental Oceanographic Commission/UNESCO, WMO, UNIDO, IAEA, the United Nations and UNEP. It is open to sponsorship by any United Nations organization, agency, fund or programme, each of which appoints a Technical Secretary. The Technical Secretaries, together with the Administrative Secretary nominated by IMO, form the Executive Board, which develops the budget and workplan and selects the Chairman and Vice-Chairman of GESAMP. The Executive Board, together with the Chairman and Vice-Chairman, form the Executive Committee, which selects and appoints the members of GESAMP and monitors and reports on its activities. The Administrative Secretary, based at the office in IMO, supervises general coordination and support to the Executive Committee, the Group itself and its working groups. GESAMP members collectively provide overall scientific guidance, perspective and oversight, including the review and approval of reports before publication. Reports are prepared by ad hoc working groups, which are constituted from members of GESAMP and its pool of experts.

Options for a pool of experts for the regular process

99. In addition to the panel of experts, there is likely to be a need to establish a pool of experts from which to draw additional experts, as necessary:

(a) For individual assessments under the regular process, when panel experts do not have sufficient time or when additional fields of expertise are needed;

(b) As external peer reviewers for the products of the regular process (that is, external reviewers who have not participated in the development of the products they review);

(c) As a resource for the development and execution of capacity-building initiatives.

100. Three main options can be identified for establishing such a Pool:

(a) The management and review body could establish a specific pool of experts for the regular process. To cover the necessary expertise in relation to regions, disciplines and other criteria, the pool would need to contain a substantial number of experts. In response to a periodic open call for experts, nominations would be accepted from all stakeholder groups, including Governments, intergovernmental organizations, international scientific organizations, non-governmental organizations, industry and professional associations, holders of traditional knowledge and members of the panel of experts. Selections would have to be based on an agreed profile and selection criteria, as with the panel. The secretariat would review the nominations, based on the profile and criteria, and submit a list of candidates to the panel for its consideration. The panel would forward its selection to the management and review body for final approval. To ensure turnover, appointments to the pool would remain valid for a specified number of years;

(i) *Pro*. This would help to ensure a source of additional expertise for the panel, as needed. Those appointed to the pool would also be drawn into the work of the regular process and would thus, to some extent, become its ambassadors;

(ii) *Contra*. An ongoing commitment of resources would be required in order to maintain the pool and might well result in the appointment of some experts whose services would never be needed. There would also be a continuing risk that the established pool would not contain the type of expert required for some specific purpose;

(b) Experts could be appointed on a case-by-case basis. When a specific need was established, the secretariat would invite Governments and relevant stakeholder organizations to propose experts who would then be reviewed in the same manner as under (a), for decision by the management and review body (or perhaps by the Co-Chairmen of the panel of experts, acting under delegated powers);

(i) *Pro*. This would reduce substantially the initial work — all that would be needed would be the list of organizations that would be invited to propose experts (in addition to members of the panel of experts). It would also make it more likely that the individuals proposed would match the expertise needed for any particular assessment. In addition, groups with specialized interests could

be confident that they would have the opportunity to propose experts for issues of interest to them;

(ii) *Contra*. It is possible that this nomination and selection process could delay a particular activity where additional experts are needed, but for most assessments, the time between agreement on a topic and developing more detailed terms of reference, securing funding and commencing work would be sufficient to solicit and review proposals for relevant experts and agree on a list;

(c) Experts could be drawn from suitable existing lists. For example, GESAMP already maintains a pool of experts to provide inputs to its working groups. Similar lists of experts exist for such marine-related projects as Land-Ocean Interactions in the Coastal Zone, sponsored jointly by the International Geosphere-Biosphere Programme and the International Human Dimensions Programme on Global Environmental Change. The secretariat could identify a list of candidates from these existing lists for review by the panel and approval by the management and review body (or perhaps by the Co-Chairmen of the panel):

(i) *Pro*. This would enable the regular process to avoid duplicating the work of other expert bodies in drawing up lists of experts and would ensure a reasonably rapid response to meet identified needs;

(ii) *Contra*. There would still be a risk that some needs could not be covered from the lists drawn up by others, as these lists are based on the mandates and needs of the organizations involved.

101. A supplemental nomination process that could be contemplated under all three options would involve self-nomination by experts who wished to contribute to assessments undertaken by the regular process. They would be subject to the same criteria and selection process as other experts. For example, the International Council for the Exploration of the Sea and GESAMP already provide for self-nomination of experts.

Recommendations on the pool of experts

102. On balance, the Group of Experts considers that the first option is the most promising, but would need to be supplemented, whenever necessary, by case-by-case appointments, as in the second option. Self-nomination by experts should be provided for.

Options for secretariat support of the regular process

103. The management and review body and the panel of experts will need strong secretariat support. The Group of Experts identified nine main functions of a secretariat:

(a) To support the work of the management and review body and the panel of experts by organizing meetings and providing administrative and substantive support for their meetings and other work;[16]

(b) To identify, acquire, coordinate and manage information (primarily information shared with other processes) for consideration by the panel of experts,

[16] For example, telecommunications conferences and Internet-based virtual offices.

and to run a system to manage data, tools, resources and documents to support the experts' work;

(c) To organize and coordinate the peer review process for products of the regular process;

(d) To prepare an annual report to be submitted to the United Nations General Assembly, in accordance with the mandate of the regular process, and to the different United Nations bodies and other organizations that sponsor members of the management and review body;

(e) To develop and maintain interactions with existing regional and global assessment processes, expert networks and other partners;

(f) To organize and coordinate public information and outreach activities of the regular process, including editorial work and the release of reports and other products;

(g) To serve as a focal point to promote and facilitate capacity-building that supports the objectives of the regular process;

(h) To develop the programme and budget of the regular process and manage and report on related funds/trust funds;

(i) To help mobilize financial resources to support the regular process in addition to those provided by Governments, as envisaged in paragraph 114 below.

104. While there is a theoretical option of establishing an independent secretariat, the Group of Experts considers that the regular process will benefit substantially if it is hosted within the United Nations structure in a body or bodies with experience in managing a scientific process, appropriate links to relevant expert communities and stakeholders, and competence to enter into agreements with potential partners and collaborating institutions. Moreover, it will be more cost-effective if the secretariat can draw on existing facilities and services, and benefit from the standing and continuity of an established body or bodies.

105. Against this background, the following three options are presented, although a variety of combinations could be envisaged:

(a) Hosting the secretariat within a single intergovernmental organization;

(b) Establishing an inter-agency secretariat co-located in one intergovernmental organization;

(c) Distributing the secretariat among several intergovernmental organizations. [17]

106. The arguments for and against these alternatives can be summarized as follows. The first option has the advantage of a single focus of responsibility and accountability, but does not involve other international organizations directly and may undermine a feeling of "ownership" on the part of the other intergovernmental bodies associated with the regular process. The second and third options have the advantage of drawing on the skills and comparative advantages of different organizations and gaining wider institutional support and "ownership". Option (b)

[17] For example, WMO hosts the secretariat of the Intergovernmental Panel on Climate Change and WMO and UNEP provide, respectively, its Secretary and Deputy Secretary.

concentrates expertise and support in one location and is likely to encourage coordination and synergy among the agencies. Such coordination and synergy might be more difficult to achieve under option (c). At the same time, option (b) may diminish interaction of secretariat staff with their parent agency, depending on the location selected.

Recommendations on the secretariat for the regular process

107. On balance, the Group of Experts considers that there is advantage in a co-located, inter-agency secretariat. It will be important to identify distinct functions for each agency, reducing the likelihood of duplication or confusion over their respective roles; for example, the distinct functions of the Division for Ocean Affairs and the Law of the Sea, which is responsible for providing substantive services for processes like the Informal Consultative Process or ad hoc meetings established by the United Nations General Assembly.

Focal points to promote interaction and collaboration with the regular process

108. Paragraphs 52 to 56 above stress the importance of networking among those involved in assessment processes. But before members of a network can communicate, they need to know who the other nodes of the network are and how to contact them. It will be particularly important that there is effective networking among:

(a) The members of the management and review body of the regular process, the panel of experts and the secretariat;

(b) Global intergovernmental organizations and other relevant global organizations;

(c) Regional seas organizations, regional fisheries bodies, regional marine-science bodies and other relevant regional organizations;

(d) National bodies engaged in marine monitoring, assessment and research;

(e) Components of civil society and the private sector interested in the state of the oceans.

109. When implementing the regular process, Governments and agencies will need to identify focal points within their organizations who can act as interlocutors with the other members of this proposed network. In the same way, global and regional international organizations, at the governing body level and/or the secretariat level, as appropriate, will need to accept an obligation to establish focal points. Those components of civil society and the private sector who wish to be involved will equally need to identify focal points.

110. The focal points need to be more than recipients of information. They also need to interact in three complementary directions. First, they must have sufficient status and resources within their own organization (and for national bodies, among all the relevant national bodies) to be able to coordinate, liaise or interact with other relevant parts of their own organization or national Government so that they can respond fully to enquiries and requests from, and interact effectively with, other parts of the network. Secondly, they need to communicate with the central units of the regular process. Thirdly, they need to communicate within their region with both

regional bodies and national organizations. This multidirectional communication is essential to support fully integrated assessments.

Recommendations on focal points

111. The Group of Experts recommends that Governments and relevant organizations identify focal points for the regular process and provide them with sufficient status and resources to interact effectively with the process, with relevant elements of their own organization and with other organizations within their region in order to improve marine assessment.

D. Options for financing the regular process

112. The first issue in addressing financing options is to consider what main expenditures it would be necessary to cover. Appendix III below, entitled "Implementing the first cycle of the regular process: actions and exemplifications of costs", gives an initial overview of the possible cost implications of the expert, management and support services discussed in the present report.

113. The way in which resources for the regular process would be provided will depend very largely on the decisions taken on institutional arrangements. For example, if a single agency is the host for the secretariat, what is needed will be very different from what would be needed if the secretariat function is shared among several agencies.

114. Rather than anticipating these decisions and attempting to work out a single financial mechanism, therefore, the Group of Experts has identified the factors which should shape the mechanism. The mechanism should:

(a) Recognize that the creation of the regular process will require the provision of resources by Member States through the United Nations, its specialized agencies and/or other global intergovernmental organizations;

(b) Ensure that, irrespective of the way in which resources are provided, the United Nations and each of the participating global intergovernmental organizations have a sense of "ownership" of the regular process as a whole;

(c) Settle financing for the whole of each cycle of the regular process as early as possible in that cycle, so that there is a stable base for operations;

(d) Ensure that there is a clear budget for the regular process (either as an independent budget or as an identified part of a larger budget) which demonstrates that the agreed needs and the resources provided to meet them are in balance;

(e) Have a clear central focus for management and accountability so that Governments and other stakeholders can easily monitor the financial aspects of the regular process.

115. The overall direct resource needs for the first five-year cycle of the regular process, based on the overall indications of costs in the appendix, would average from $4 million to $5.6 million a year, or from $20 million to $28 million for the full cycle. Any additional costs of capacity-building would have to be calculated in light of an evaluation of needs and of what can be delivered by organizations already active in this area. In addition, there would be costs for States which provide

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support directly to participants in the United Nations forum, the management and review body, and/or the panel of experts.

VII. Summary of recommendations

116. The Group of Experts recommends as the framework of the regular process:

(a) The objective set out in paragraph 43 above;

(b) The scope set out in paragraph 44 above;

(c) The eight principles set out in paragraph 39 above (and elaborated in paras. 4.4-4.12 of the assessment of assessments report) as a basis to guide the establishment and operation of the regular process, to be reflected in the practices established for and by the regular process, and in its institutional arrangements;

(d) The best practices for each of the first 11 key design features identified in paragraph 40 above (and elaborated in paras. 4.13-4.82 of the assessment of assessments report) to guide the development and implementation of the regular process.

117. The Group of Experts recommends that the first cycle of the regular process run from 2010 to 2014. The first cycle should deliver:

(a) Preparatory, supporting products to improve marine assessment and support the objective of the regular process during the first part of the cycle, from 2010 to 2012, which will strengthen capacity, improve knowledge and methods of analysis, build on and guide existing assessment processes, and initiate effective networking and communication with and among them;

(b) The first version of an integrated assessment of the oceans, establishing a baseline for future global assessments, during the latter part of the cycle, from 2013 to 2014, which could include a thematic assessment of a major cross-cutting aspect of the world's oceans, such as food security.

118. The Group of Experts recommends the following institutional arrangements for the regular process:

(a) The United Nations General Assembly should identify a global forum under its auspices, either the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea or an ad hoc meeting, such as a working group of the whole or an international workshop, to:

(i) Specify the objective and scope of each individual assessment to be undertaken by the regular process, key questions to be answered and primary target audiences, in order to ensure that assessments are relevant for decision makers;

(ii) Examine the findings of assessments in order to draw out their implications for consideration by the appropriate decision-making body (or bodies);

(iii) Evaluate the regular process and its products periodically;

(b) The establishment of a management and review body for the regular process, comprised of:

(i) From 18 to 36 States Members of the United Nations;

(ii) Thirteen members from intergovernmental bodies, one each from FAO, the Intergovernmental Oceanographic Commission/UNESCO, IMO, ISA, UNEP, WMO, the secretariat of the Convention on Biological Diversity, the Division for Ocean Affairs and the Law of the Sea, IAEA, the World Bank, UNDP, UNIDO and WHO;

(iii) Five additional members from stakeholders with expertise in the work of the regular process, appointed by States members of the management and review body on the basis of recommendations from the International Union for Conservation of Nature, the Scientific Committee on Oceanographic Research of the International Council for Science, the International Social Science Council, the World Ocean Council or the many sectoral business and industry associations, and a body or bodies representing indigenous peoples;

(c) The establishment of a new panel of experts of, say, 20 members, based on agreed criteria and procedures, to organize and carry out the assessments of the regular process.

(d) The establishment of a pool of experts for the regular process, based on agreed criteria and procedures, which would be supplemented, whenever necessary, by case-by-case appointments drawn from nominations by Governments and other relevant stakeholder organizations, and which would provide also for the self-nomination of experts;

(e) The establishment of an inter-agency secretariat of the regular process, co-located at an intergovernmental organization;

(f) Governments and relevant organizations should identify focal points for the regular process and provide them with sufficient status and resources to interact effectively with the regular process, with relevant elements of their own organization and with other global and regional organizations, especially within their region.

Appendix III

Implementing the first cycle of the regular process: actions and exemplifications of costs

1. The present appendix has been prepared to provide a focus on the levels of cost implied if the regular process were developed along the general lines set out in the present report. It cannot be precise, since many options are discussed in the report and it would be impossible to describe the financial implications of them all.

2. The appendix therefore sets out, at a general level, one possible pattern of actions to implement the first cycle of the regular process in the years 2010 to 2014, as described in paragraphs 57 to 61 above. Many other patterns are possible. This is not a developed proposal and the cost figures mentioned are not estimates; rather, they are overall indications of the orders of magnitude that might be needed. This material should therefore be considered as a set of points for further consideration.

3. However, one point that should be stressed is the way in which the regular process can add substantial value to the expenditures which are already being undertaken in monitoring and assessing the oceans and seas.

4. Estimates of current annual expenditures by Governments on existing arrangements (at the national, regional and global levels) for monitoring and assessing the state of the marine environment[a] approximate several tens of billions of dollars.[b] In addition, there is probably at least as much expenditure by commercial organizations (both for their own purposes and as a result of Government requirements) and voluntary organizations.

5. The regular process offers an opportunity — for a very modest further investment — to get a much better return on these substantial expenditures in three respects. It would:

(a) Give decision makers a more complete global picture of environmental, economic and social aspects of the oceans to support future policymaking;

(b) By placing all the other marine assessment work within the context of fully integrated global and regional marine assessments, help other organizations to relate their specialized regional, sectoral or thematic work to a more integrated assessment and to the work carried out on larger or smaller geographic scales;

(c) By producing a much clearer picture of marine assessment activities worldwide, including social and economic aspects, help organizations active in the field to concentrate their activities, including capacity-building, more precisely.

[a] Including fisheries, shipping, mariculture, offshore oil and gas installations, other seabed activities (such as aggregate dredging), land-based sources of pollution, tourism, dumping, invasive species, marine debris, habitat assessment (such as coral reefs), biodiversity and effects of climate change.

[b] The United States of America is reported to be spending $600 million a year on ocean science (U.S. Commission (2004)). In the fisheries field alone, the Australian Fisheries Management Authority spent over $A 5 million on research and data in 2007/08 (AFMA (2007)). Ireland is reported to have spent $13.3 million in 1998 on research and development, promotion of international activities and cooperation, policy advice, data collection and analysis; New Zealand spent $14 million in 1997/98 on fisheries policy advice, stock assessment, research and development; and Norway spent $28.1 million in 1998 on fisheries research (Pascoe and others, 2002).

Setting up the institutional arrangements for the regular process

6. Six institutional elements for the regular process are proposed in the present report:

(a) *The United Nations forum* (see paras. 65-71). This forum (through which States Members of the United Nations provide input on the development of an assessment, examine its findings and ultimately evaluate the process and its products (see paras. 47 (d) and 67 (c)) would be needed at the end of the first cycle. If the option of the Informal Consultative Process were selected, any additional costs are likely to be minimal. If the second option were selected, the costs would be on the same order as those for the one-week meeting of the ad hoc working group of the whole of the United Nations General Assembly, which is to consider the present report. The forum could meet at the end of each cycle to prepare advice on the results of that cycle for the Assembly, together with suggestions for adjustments in the products from, and in the process for, the next cycle. The "package" cost of a one-week meeting at the United Nations, including documentation, translation, interpretation and security, amounts to approximately $300,000.

(b) *The management and review body* (see paras. 72-89). This body would need to meet soon after the General Assembly establishes the form of operations of the regular process in order to elaborate on the decisions of the Assembly and to establish procedures and other working arrangements, including budgets. The management and review body would then need to meet yearly, with probably two meetings in the last year of the first cycle to enable it to comment on the products of the panel of experts. Its costs are likely to be on the same order as those of the Ad Hoc Steering Group for the assessment of assessments, but possibly increased to allow for a larger membership. The costs of the Steering Group have amounted to around $75,000 for each meeting, so using an estimate of $100,000 per meeting for a larger membership, the total cost for six meetings in the first cycle would amount to around $600,000.

(c) *The panel of experts* (see paras. 91-98). The panel of experts will need to be set up as soon as the management and review body has agreed to the details of the procedure. The panel will need to hold its first meeting within six months or so of the decisions of the General Assembly on the regular process. Although much work can be done electronically — as the assessment of assessments Group of Experts has demonstrated — face-to-face meetings are essential. The panel would need to meet at least twice a year. Its costs would be substantially higher than those of the Group of Experts, since more support to members would be needed. Panel members will need to devote a substantial part of their working time to the regular process — possibly 25 per cent to 30 per cent. In some cases, their employers may be prepared to support them for this work. In many cases, however, the regular process will have to provide direct support. Each meeting of the Group of Experts cost around $100,000, without substantial provision for support to the experts. The panel would therefore be likely to cost at least $750,000 a year. Over a five-year cycle, an indication of the order of cost is therefore from $3.75 million to $4 million.

(d) *The secretariat* (see paras. 103-107). An initial core of the secretariat will be needed immediately after the General Assembly adopts decisions on the regular process, in order to arrange the first meeting of the management and review body and to put in hand arrangements for the appointment of the panel of experts. This

initial core might be provided by secondments from the international organizations that will participate in the process, pending permanent recruitment and appointments. It seems likely that over the course of the first cycle of the process, the secretariat would need to build up to a strength of around 8 to 10 Professional staff and an equal number of support staff. Costs will depend substantially on the exact organizational structure adopted. However, as an example, the secretariat of the Convention for the Protection of the Marine Environment of the North-East Atlantic (which has 5 Professional and 7 support staff) costs around $1.5 million a year, including salaries, accommodation, information technology, travel, translation and overhead. The costs of a secretariat twice this size for the regular process could therefore rise to the order of $3 million a year. As a further comparison, the standard staff costs at United Nations Headquarters for 10 Professional (at the P-3 level) and 10 support staff (at the General Service-4 level) would amount to $1.88 million, to which operational costs would need to be added. An indication of the order of costs over a five-year cycle is therefore from $10 million to $15 million. The publication of a major report and related outreach activities in each cycle would need to be considered separately and could cost (including translation into the working languages of the United Nations) as much as $400,000;

(e) *Additional expert advice* (see paras. 99-102). Substantial work will be needed to support the workshops used to develop the preliminary assessment products noted below and to provide for assembling the necessary knowledge. Some work would be carried out by the secretariat, but some will require specialist skills that the Secretariat cannot offer, including the ability to work with information only available in languages not shared by the secretariat. The costs are likely to be on the order of $ 1,500 a day (including remuneration, travel and other expenses and overhead). In light of what is said below on the workshops, as many as 400 person-days a year could be needed, giving an indication of costs of at least $600,000 a year. Over five years, an indication of the order of cost is therefore from $3 million to $3.5 million;

(f) *Focal points* (see paras. 108-111). Focal points do not seem to have any cost implications for the regular process itself, although they will require resources in the organizations which set them up. The work of the secretariat will need to include arrangements to keep focal points aware of what is going on.

Fundamental building blocks for the regular process

7. There need to be four continuing fundamental building blocks for the regular process (see paras. 50-56). The work on three of the building blocks will be carried out substantially by the secretariat (capacity-building — analysis of needs and facilitating arrangements with partners; networking; communications). The costs of this work would therefore be covered under paragraph 6 (d) above. The work on the fourth building block (improve methods of analysis) will be carried out substantially by the panel of experts, with supplemental expertise, as needed. This work would therefore be covered under paragraph 6 (c) above, with possible additional costs for other experts covered under paragraph 6 (e). Other needs may emerge in the course of the production of assessment products. For example, it is clear that additional expenditures will be needed on capacity-building, but this cannot be judged until an evaluation has been made of what can be delivered by the organizations already active in this field. It is therefore generally not possible to indicate what further

costs might be involved for the four activities, although it is likely that supplementary expenditures will be needed.

8. One element will clearly require some additional expenditure, which can now be estimated. This is the need for a portal to give all concerned ready access to the assessment products already produced, or to be produced in the future, by existing assessment processes. The UNEP World Conservation Monitoring Centre has already produced a database of such assessments, in which much of the detailed work of the assessment of assessments Group of Experts has been stored (as elaborated in box 3.1 of the assessment of assessments report). It is an essential guide to what is available. It could be developed into a portal leading to the material wherever it is currently stored. The cost of merely maintaining this database would be around $50,000 a year. Improving it into a portal and then maintaining it might increase the cost to around $100,000 a year. Therefore, the range of costs over five years is from $250,000 to $500,000.

Preliminary assessment products needed in the first cycle of the regular process

9. In the early years of the first cycle of the regular process, the strategy and timetable for the production of the integrated assessment in the later part of the cycle will need to be developed (see para. 59). Likewise, before the end of the first cycle, arrangements will need to be agreed upon for the eventual evaluation of the assessment and the process that produced it.

10. In addition, the proposed preliminary assessment products needed in the early years of the first cycle (see para. 60) cover:

(a) A set of common questions and issues to be addressed (in differing degrees of elaboration) across all the regions;

(b) Agreed assessment methods for the datasets in different scientific fields;

(c) An agreed approach to evaluating the risks that are identified;

(d) A common framework and guidelines for data assembly;

(e) An agreed approach for integrating the data and information and analytical results across sectors, ecosystem components and economic, environmental and social aspects;

(f) Methods to process digitally the available data, including the methodologies for quality assurance, modelling and the metadata that should eventually be assembled.

11. These six preliminary products involve collaboration with a number of existing assessment processes, at both the global and regional levels. An effective way of achieving this involvement would be to arrange three to four workshops on one or more of these themes around the world, in order to bring together experts involved in the assessment processes of several regions. For example, it could be envisaged that a workshop could be held to examine and prepare initial surveys and thinking on the elements referred to in paragraph 10 above for the regions of the Atlantic and the Caribbean, or for the regions of the Indian Ocean. There would also be a need for workshops at the global level to integrate the output of the regional workshops.

12. Each of these workshops would require an initial meeting, to be followed by a period of further contact between the members and a final meeting to agree on the final input to a global workshop or to be sent directly to the panel of experts. This would imply a total of 10 to 15 workshops (allowing for the fact that more than one assessment product could be considered in a single workshop). Each such workshop (including costs of support for those attending from developing countries) could cost around $150,000 to $200,000.

13. Over the first cycle of the regular process, it might therefore be necessary to make provision for expenditures on the order of $1.5 million to $3 million to produce the products identified in paragraph 10.

Evaluation

14. Finally, provision must be made for the evaluation of the first cycle of the regular process, both products and process (see paras. 47 (d) and 67 (c)). This would entail a midterm review as well as a full evaluation team at the end of the five-year cycle. Both would involve internal members from among the experts and users involved in the assessment and external members who have not been involved in the regular process in any way. The midterm review could involve two to three individuals, while the full post-cycle evaluation could involve a team of six members, three internal (2 experts and 1 user) and three external (1 user). While the costs of the internal experts are included in the expert costs under paragraphs 6 (c) and 6 (e) above, the costs of the other four (users and external team members) would have to be funded. An order of magnitude of the cost (on the same basis as for the pool of experts) for the midterm review and final evaluation amounts to $300,000. This includes the cost of one of the external reviewers who, in addition to working with the team, would be expected to monitor developments throughout the course of the assessment.

Overall resource needs

15. The overall direct resource needs for the first five-year cycle of the regular process, based on these overall indications of cost, would average from $4 million to $5.6 million a year, or from $20 million to $28 million for the full cycle. Any additional costs for capacity-building would have to be calculated in light of an evaluation of needs and of what can be delivered by organizations already active in this area. In addition, there would be costs for States which directly support participants in the United Nations forum, the management and review body and/or the panel of experts.

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Terms used in the assessment of assessments report

- *Availability of data vs accessibility of data*. Availability refers to the ability to acquire existing data, whereas accessibility refers to the technical ability to extract data from datasets in an intelligible form so they can be used by others. Both terms differ from the "adequacy" of data, that is, whether or not there is sufficient information available to make an informed judgement on a particular matter

- *Adaptive management*. The use of feedback about the effectiveness of past management actions in achieving goals, to guide changes in the management actions and/or in the goals or objectives themselves (learning). The changes are intended to increase the effectiveness of management interventions, accommodate unforeseen factors relevant to the achievement of the objectives or adjust the objectives being pursued to be more realistic, feasible or cost-effective. The feedback may come from planned and structured monitoring and evaluation, but can also be opportunistic and reactive

- *Assessment*. Assessments are formal efforts to assemble selected knowledge with a view to making it publicly available in a form intended to be useful for decision-making (Mitchell and others, 2006)

- *Best practice*. In the assessment of assessments report, best practice refers to influential practices in general, not to one single "best" practice

- *DPSIR*. Drivers – pressures – state – impacts – responses is a framework for organizing information about the state of the environment. It reflects the complex chain of cause and effect in the interactions between society and the environment

- *Ecosystem approach/approaches*. This is an approach to management that considers the entire ecosystem, including human beings, in an integrated manner. The goal of ecosystem-based management is to maintain an ecosystem in a healthy, productive and resilient condition so that it can provide the services human beings want and need. Ecosystem-based management differs from conventional approaches that usually focus on a single species, sector, activity or concern; it considers the cumulative impacts of different sectors (McLeod and others, 2005)

- *Integrated assessment*. There are various usages of the term "integrated assessments" in different disciplines. The assessment of assessments report acknowledges the broad usage but attaches particular importance to fully integrated assessments, that is, assessments that integrate across environmental, economic and social aspects, across industry sectors and across ecosystem components (which may include land-based sources of inputs as well as land-based industries that depend on marine resources)

- *Interdisciplinary (vs multidisciplinary)*. Multidisciplinary assessments are assessments where specialists in several different fields contribute information collected, analysed and interpreted according to standards of the respective disciplines, and the results are aggregated and further interpreted together. An interdisciplinary assessment may have the same basic information as a multidisciplinary assessment, but the central analyses and interpretations are

done in a way most appropriate for the goals of the full assessment, not necessarily according to the practices of any of the constituent assessments

- *Interoperable*. interoperable datasets and systems are structured so that, as components of multiple databases or systems, they can be related to one another

- *Metadata*. This term refers to information about a dataset that describes its content, format and characteristics to ensure that the data are correctly understood and interpreted. Metadata includes such information as temporal and spatial coverage of the dataset, the sampling design, ancillary data that might be included and the organization of the data in the database

- *Multidisciplinary*. See the discussion of "interdisciplinary" above

- *Ocean governance*. This term is used in the assessment of assessments report as a shorthand term for all the institutions (rules, laws, policies and measures, decision-making authorities) that specify how States and other stakeholders are to undertake human activities in the oceans

- *Regions*. Solely for the purposes of the assessment of assessments report, the Group of Experts has used 21 regions as a basis for organizing the reporting of assessment coverage and practices. These are referred to as the assessment of assessments regions

- *Response assessments*. Response assessments identify and evaluate measures that might reduce human contributions or vulnerabilities to environmental changes. They can focus on potential future response options and evaluate their risks and likely outcomes, or they may evaluate the effectiveness of policies and measures already adopted

- *Sectoral assessments*. Sectoral assessments address a particular sector of human activity, such as fishing, tourism or oil and gas development

- *Stakeholders*. For the purposes of the assessment of assessments report, stakeholders comprise Government officials at all levels, including at the community level, and parliamentarians; users of assessment results in the private sector; representatives of scientific, professional, industrial, environmental and other private organizations; representatives of intergovernmental organizations; civil society and the public; indigenous groups and other holders of traditional and/or local knowledge, and the media

- *Supra-regional*. Any geographical unit extending beyond a region but not global

- *Thematic assessments*. Thematic assessments focus on a theme or issue other than a single sector of human activity. They may cover one or more ecosystem component, such as sea turtles or coral reefs, or they may focus on a particular issue such as land-based sources of marine pollution or marine debris

- *Vulnerability*. Vulnerability refers to the potential of a system to be harmed by stresses (threats). It depends on the exposure to change (extent of change and impacts) and the sensitivity and capacity to adapt (resilience)